VERITAS NetBackup™
User's Guide
UNIX
Release 3.2

UNIX
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Preface

This guide describes how to use Release 3.2 of *NetBackup User's Guide - UNIX* for the UNIX platform. In this guide, VERITAS NetBackup is referred to as NetBackup.

Audience

The guide is intended for the system administrator and for the UNIX end user. It assumes a basic knowledge of UNIX commands and operations.

Organization

The following are guidelines for using this document:

- Chapter 1, "Introduction to NetBackup," provides an overview of NetBackup, describes how the end user operates NetBackup, and describes technical terms and concepts. Read this chapter to become familiar with the world of NetBackup.
- Chapter 2, "Using the Graphical Interface," explains how to use the graphical interface program, xbp, to perform backup, archive and restore operations.
- Chapter 3, "Using the Menu Interface," explains how to use the NetBackup menu-interface program, bp, to perform backup, archive, and restore operations.
- Chapter 4, "Using the Java Interface," briefly describes the NetBackup Java User Interface and how to get started with it.

- Chapter 5, “Reference Guide to the Interfaces,” describes the various windows, screens, and menus associated with the `xbp` and `bp` user interface programs.
- Appendix A, “Man Pages,” contains man pages for commands specific to the NetBackup product.
- Use the glossary for an explanation of terms used in this manual and in the NetBackup interfaces.

Related Documents

The following documents provide related information.

Refer to the following documents if you are using a UNIX master server.

- *NetBackup Release Notes - UNIX*

  Provides important information about UNIX NetBackup server software, such as the platforms and operating systems that are supported and operating notes that may not be in the manuals or the online help.

- *NetBackup System Administrator’s Guide - UNIX*

  Explains how to configure and manage NetBackup on a UNIX system.

- *NetBackup Troubleshooting Guide - UNIX*

  Provides troubleshooting information for UNIX based NetBackup products.

Refer to the following documents if you are using a Windows NTmaster server.

- *NetBackup Release Notes - Windows NT Server*

  Provides important information about Windows NT NetBackup server software, such as the platforms and operating systems that are supported and operating notes that may not be in the manuals or the online help.

- *NetBackup System Administrator’s Guide - Windows NT Server*

  Explains how to configure and manage NetBackup on a Windows NT server system.

- *NetBackup Troubleshooting Guide - Windows NT Server*

  Provides troubleshooting information for Windows NT based NetBackup products.

Conventions

The following explains typographical and other conventions used in this guide.

Type Style

The following table describes the typographic conventions used in this guide.

Typeface	Usage	Examples

courier	Computer output; user input; names of commands, files, and directories	`You have mail.`
		
		The `mkdir` command creates a new directory.
		
		`mkdir new`

italics	New terms; document titles; words to be emphasized; variables to be substituted with a real name or value	`mkdir` *filename* Refer to the *User's Guide* for details.
bold	Glossary terms	

Notes and Cautions

Note: This is a Note and is used to call attention to information that makes it easier to use the product or helps you to avoid problems.

CAUTION! This is a Caution and is used to warn you about situations that can cause data loss.

Keyboard Sequences

Some keyboard command sequences use two or more keys at the same time. For example, you may have to hold down the Ctrl key before you press another key. When this type of command is referenced, the keys are connected by hyphens. For example, Ctrl-t.

Command Usage

The following conventions are frequently used in the synopsis of command usage.

brackets [ ]

The enclosed command line component is optional.

Vertical bar or pipe (|)

Separates optional arguments from which the user can choose. For example, when a command has the following format:

command [*arg1*|*arg2*]

the user can use either *arg1* or *arg2*.

Getting Help

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support@veritas.com

Introduction to NetBackup

NetBackup lets you back up, archive, and restore files, directories, or raw partitions that reside on your client system. In NetBackup terminology, the system that needs the backup or restore is the *client* (or agent). The system that manages the storage and retrieval of the backup data is called the NetBackup *server.*

User-Directed Operations

User-directed operations are NetBackup operations the user can perform from the client. These operations can be performed without administrator intervention or logging into the NetBackup server.

User-directed operations include:

- Back up files, directories or raw partitions that reside on your local disk. A backup operation saves the data to a storage device on the NetBackup server.
- Archive files and directories that reside on your local disk. An archive operation saves the selected files and directories to a storage device on the NetBackup server and then deletes them from your local disk.
- Restore previously backed up or archived files, directories, or raw partitions to either the location from which they were backed up or to another location. You select what you want to restore and NetBackup automatically restores it to the disk.

After you start a user-directed operation, the server manages storage and retrieval of data. All file transfers occur in the background so there is no long wait for the operation to complete before regaining control of your terminal.

User Interfaces

NetBackup provides four user interfaces:

- Graphical interface
- Menu interface
- Java interface
- Command line interface

You can perform user-directed operations through any of these interfaces, but the graphical and menu interfaces are the ones that you will probably use most often:

- The X-Windows based graphical interface is used on any X terminal or workstation with an X server program compatible with X11.R4 or later. The `xbp` command starts the graphical interface program. Refer to “Using the Graphical Interface” on page 11 for details on using the `xbp` graphical interface program.
- The character based menu interface is used on virtually any terminal that can connect to a client system. The `bp` command starts the menu interface program. Refer to “Using the Menu Interface” on page 49 for details on using the `bp` menu interface program.
- For more information on the Java interface, refer to “Using the Java Interface” on page 77 or see the online help for that application. To open the Java interface, execute the following command:

  ```
  /usr/openv/netbackup/bin/jbpSA
  ```

- The command line interface lets you perform backup, archive, restore, and list operations by entering individual commands at the shell prompt. Refer to Appendix A, “Man Pages” for details on command lines.

Both the graphical and menu interfaces have all the options necessary to perform and monitor user-directed operations. An important feature of these interfaces is their built-in ability to browse for and select files and directories:

- During a backup or archive, you can browse the file system on your client to select files and directories.

- During a restore, you can browse the backup history for your client to select files and directories that you have previously saved. It is also possible to browse the backup history for other clients if the NetBackup administrator gives you the necessary permissions.

Progress Logs and Mail Notifications

NetBackup progress logs provide information on the progress of a NetBackup operation. These logs also indicate the success and failure of a NetBackup operation. For each user-directed operation, NetBackup can be configured to create a separate progress log file. You can delete the log files when they are no longer needed. For more details on creating log files, refer to “Checking Progress of Operations” on page 42 for xbp or “Checking Progress of Operations” on page 75 for bp.

The NetBackup server can be configured to deliver the client user email notifications on the status of the client user’s NetBackup operations. Refer to the *NetBackup System Administrator’s Guide - UNIX* or the *NetBackup System Administrator’s Guide - Windows NT Server* for details on configuring the server for email notifications.

Backup and Archive Windows

NetBackup can be configured to allow user-directed backups or archives to occur only during specific time periods, usually referred to as *windows*. For example, if your window is from 8 am to 6 pm, you will not be able to back up or archive at other times. The NetBackup administrator defines these windows during server configuration.

Note: The backup and archive windows do not affect user-directed restores. You can perform a restore at any time.

Automatic Backups

The NetBackup administrator can configure NetBackup to perform automatic full and incremental backups of your client system. These backups occur unattended and under control of the NetBackup server. If carefully scheduled,

the automatic backups will meet most of the backup requirements for your client. NetBackup can also be configured to send mail on the success or failure of automatic backups to the administrator of your client system.

For more information on automatic backups and other administrator directed activities, refer to the *NetBackup System Administrator's Guide - UNIX* or the *NetBackup System Administrator's Guide - Windows NT Server*.

Exclude and Include Lists

The NetBackup system administrator configures the exclude and include lists for your client.

The NetBackup exclude list contains a list of files and/or directories that will not be included in scheduled backups. Files and/or directories in the exclude list can still be backed up manually through the user interface.

In some cases, the system administrator may create an exclude list for a specific class or a class and schedule combination. The master server will use a single exclude list when performing a scheduled backup for all clients in the specified class or class and schedule combination. If, however, an individual client finds that a file or directory must be included in a scheduled backup, then an include file list can be created on the client.

The NetBackup include list contains a list of files and/or directories that will be included in a scheduled backup. This is also useful if, for example, you want to exclude an entire directory except for one file.

The *NetBackup System Administrator's Guide - UNIX* or the *NetBackup System Administrator's Guide - Windows NT Server* provide instructions for creating the exclude and include lists.

Note: Exclude and include lists do not apply to NetBackup DomainOS clients.

Alternate Client Restore

This option, sometimes called server directed restore to another client, is available only to the NetBackup system administrator for the master server. The NetBackup administrator can direct file or raw partition restores to any client.

Read This Before Using NetBackup

Read the following before performing any user operations with NetBackup.

Cautions and Notes to Observe When Using NetBackup

- When performing backups and archives, remember that if a file is only a symbolic link to another file, NetBackup backs up or archives only the link, not the file itself. This eliminates multiple backups of a file when more than one directory contains a symbolic link to it. It also means you must be certain to back up or archive the source file.
- On a Hewlett Packard system, do not attempt to restore a file in a CDF directory if the CDF does not already exist. If you do, the directory is created without the directory mode bits necessary for it to be recognized as a CDF. The correct procedure is to restore the CDF itself thus restoring the files it contains. To restore only missing files in a CDF, ensure that you specify to *NOT* overwrite existing files.
- The maximum path length that you can specify for a file is 1023 characters.
- The overwrite option is ignored during raw partition restores. The device file must exist and the disk partition is overwritten whether this option is set or not.

Questions to Ask Your Administrator

During configuration, the administrator configures NetBackup to meet the backup and archiving requirements of your site. The following are some questions you should ask the administrator about your configuration before you use NetBackup. Knowing the answers to these questions can help you to avoid problems later:

- Which files and directories will NetBackup include in automatic backups of your client? The list that the administrator configures may not include everything on your local disk. If there are additional files that you want backed up, you can either ask the administrator to add them to the file list for automatic backups or back them up yourself.
- When do the automatic backups occur? By knowing the schedules, you can recognize when you must perform your own backups to preserve critical data.

- When are user-directed backups and archives permitted for your client? During configuration, the administrator determines when you can perform backup and archive operations. For example, if they are allowed between 8 am and 4 pm, you will be unable to perform a backup or archive at 6 pm.
- What is the retention period for your data? It is difficult to recover expired backups. Therefore, ensure that the retention time is long enough to suit your needs.
- Can you back up, archive, and restore NFS mounted files? NetBackup allows this but your specific configuration may not. Remember that when you archive NFS files, you remove them from the system on which they reside.
- Does your configuration permit backups and archives of entire file paths even if they cross file systems? For example, if the backups and archives for your workstation are configured to cross file systems, specifying / (root) backs up the entire disk. Otherwise, specifying / backs up only the files and directories that are in the / file system and excludes files in other file systems.
- How do you restore files that were backed up or archived by another client? Normally, NetBackup allows you to restore files only for the original client. The administrator can override this if necessary.
- Is the NetBackup configuration set up to provide you with mail notifications on the results of your user-directed operations? These mail notifications can eliminate the need for you to monitor the progress logs. NetBackup can also send mail on the success or failure of automatic backups to the administrator of your client system.

File Permissions Required By NetBackup

You need UNIX read permission to back up a file and UNIX write permission to archive a file (since the archive operation removes the file from the disk).

Note: During a backup or archive, NetBackup stores only the user ID and group ID that are assigned to the files. NetBackup does not store the user ID and group ID of the person performing the backup. For example, assume a user *uuu* and group *ggg* own a file and the root user backs it up. Regardless of who restores it, the restored file still shows user ID = *uuu* and group ID = *ggg*.

Listing and restoring files and directories require the following UNIX permissions:

- To list or restore files in a directory owned by someone else, you must have read and execute permission for the directory and all directories leading to it.
- To restore a file to its original location, you must have write access to the file (if the file exists), or to the directory (if the file does not exist).

The following table shows how NetBackup restores files in various situations (for example, if a copy of the file or directory already exists).

Table 1 File Permissions

Type of Restore Attempted	Results
Restore a file that already exists and overwrite the existing file.	If you are a root user, NetBackup restores the file and sets file ownership to the same owner as the backup image. If you are not a root user, NetBackup restores the file only if you have write access to it. In a case where the file is read only, but you have write access to the parent directory, NetBackup removes the file and restores the backup image with you as the owner.
Restore a file that already exists and *not* overwrite the existing file.	For both root and nonroot users, NetBackup does not restore the file and places a message in the progress log.
Restore a file that doesn't exist.	If you are a root user, NetBackup restores the file and sets file ownership to the same owner as the backup. If you are a nonroot user, the file is created with you as the owner and restored only if permissions on the parent directory allow it.
Restore a file when a directory exists with the same name as the file.	For both root and nonroot users, NetBackup places an error message in the progress log and does not restore the file or remove the directory. This occurs regardless of whether you elect to overwrite existing files.

Table 1 File Permissions

Type of Restore Attempted	Results
Restore a directory when a file exists with the same name as the directory.	NetBackup restores the directory and removes the file, providing that permissions allow it and you elect to overwrite existing files. Ownerships are set as follows. If you are a root user, NetBackup sets ownership of the directory to that of the original owner. If you are a nonroot user, the user name under which you are doing the restore is assigned ownership.
Restore a file in a directory that does not exist.	NetBackup creates the directory with the user name and group of the user doing the restore and uses the mask bits 022 to set the mode of the directory. The file is then restored in the same manner as one that does not exist (see above).

Using the Graphical Interface 2

This chapter explains how to use the graphical interface program, xbp, to perform NetBackup operations. This interface is X-Windows based and requires an X terminal or a workstation with an X server program compatible with release X11.R4 or later. The interface uses OSF and Motif conventions.

The purpose of this chapter is to provide step-by-step procedures for using the graphical interface. For information about specific windows or menu options within the interface, refer to Chapter 5, “Reference Guide to the Interfaces.” Refer also to the online help facility.

The areas covered here are as follows:

- Starting the Graphical Interface
- Performing Backups and Archives
- Performing Restores
- Resolving Links
- Checking Progress of Operations
- Obtaining a List of Your Backups and Archives
- Finding and Selecting Files and Directories

Note: xbp is not available on DomainOS systems. You must use bp on those systems.

Starting the Graphical Interface

1. Ensure that your X terminal or workstation X server is named according to X conventions.

2. Set your DISPLAY environment variable to the appropriate value.

   The most convenient method is to define the DISPLAY variable with your login procedure.

   The following example uses the `setenv` command after login to set up the display for an X terminal or server named orca:

   ```
   setenv DISPLAY orca.user.abc.com:0
   ```

   You can also use the -d option when you execute `xbp` command (see Step 3).

3. Start the graphical interface by typing `xbp` command as shown in the following examples. The variation you use depends upon whether your DISPLAY environment variable is already set:

   - If the DISPLAY variable is set, type:

     ```
     /usr/openv/netbackup/bin/xbp &
     ```

   - If the DISPLAY variable is not set, use the -d option:

     ```
     /usr/openv/netbackup/bin/xbp -d orca.user.abc.com:0 &
     ```

   The & character puts the program in background mode so your original window stays active and is available for other activities.

When xbp starts, the xbp_main window appears on your screen.

When you start xbp, the Browse File System (Backup or Archive) command from the File menu is selected by default. The Directory Structure pane and the Files pane show all directories and files in the directory specified in the Directory To Search box and the next two levels down. The Directory To Search box is set to the directory where you start xbp. You set the number of levels down in the Directory Depth box.

Refer to “xbp_main Window” on page 85 for details on this window.

Performing Backups and Archives

The following procedure explains how to perform a backup of files, directories, or raw partitions or to archive files and directories. The main difference between backups and archives is that an archive deletes the designated files and directories from your disk after successfully backing them up.

1. Change NetBackup master servers if necessary.

   If there is more than one master server to which you can send your backups and archives, ensure that you are connected to the correct one. Ask your NetBackup administrator if you have questions about which master server to use.

   Normally, you will not have to switch master servers unless, for some reason, the administrator has temporarily moved the NetBackup backups (for example, because of a problem on the original master server). If the change becomes permanent, the administrator should change your default to reflect the other server.

   a. Click Configuration on the File menu.

   Refer to “File Menu” on page 86 for details on this menu.

This opens the xbp_config dialog box.

The name of the current master server appears in the Server box. When you start `xbp`, the server is set to the default for your client.

If you do not want to change the master server, click Cancel. If you want to change the master server, go to the next step.

b. Type the name of the other server in the Server box.

c. Click OK.

If you typed an invalid name, or if your client does not belong to a NetBackup class on that server, you get will an error. If this occurs, see your system administrator for assistance.

2. Find and select the desired files and directories.

If the desired files or directories are not currently displayed, find them by using the methods described under “Finding and Selecting Files and Directories” on page 45.

In this example we are going to select the `release_notes.txt` file.

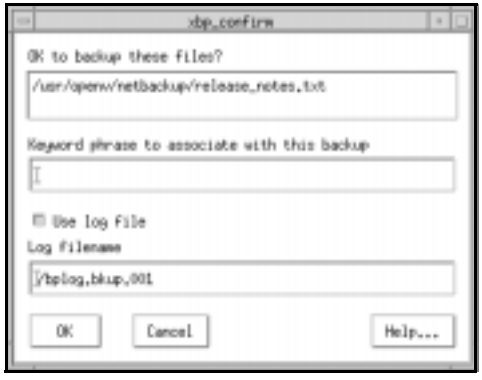
a. Select the `/usr/openv/netbackup` directory in the Directory Structure pane.

When a directory is selected in the Directory Structure pane, all of the subdirectories and files listed in the Files pane are implicitly selected. These implicitly selected subdirectories and files will not appear highlighted in the Files pane.

b. Select `release_notes.txt` in the Files pane.

3. On the Backup menu, click Backup Selected Files and Directories.

This opens the xbp_confirm dialog box.



Note: If you click Archive Selected Files and Directories, NetBackup will back up the selected directory and all of its subdirectories, *then* delete the backed up directories from your system.

a. Review your selections in the xbp_confirm dialog box.

b. Choose whether to use the progress log file.

   Select the Use Log File checkbox to create a log file in your home directory and write to this file as the operation progresses. The checkbox is selected when highlighted.

   The name of the log file appears in the Log Filename box. For information on checking the log, see "Checking Progress of Operations" on page 42.

c. Type a keyword in the Keyword Phrase to Associate with This Backup box.

   The phrase you type in the Keyword Phrase to Associate with This Backup box will be the key for finding this backup during the restore process. In this example we will use the keyword `test`. You will use this keyword during the restore operation in the following section.

d. Click OK. This sends your backup request to the server. The main window will appear.

   To return to the main window without starting the backup or archive, click Cancel.

Performing Restores

The following topics explain how to restore files, directories, and raw partitions:

- Basic Restore Procedure - includes detailed instructions for restoring files.
- Shortcut Restore Procedures - abbreviated procedures for common operations.
- Advanced Restore Operations - information on performing true-image restores and alternate client restores.

Basic Restore Procedure

The following procedure is a detailed explanation of how to restore files, directories, and raw partitions to your client system.

Note: If you are restoring raw partitions, ensure that the partition is not mounted and not in use. Also ensure that the device file for the raw partition exists prior to the restore.

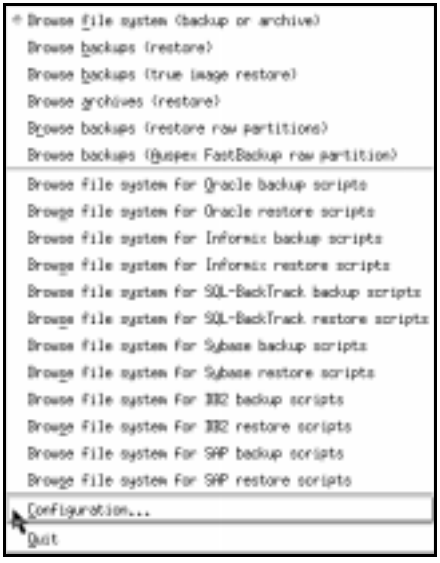
Note: If you are restoring a directory, you may want to refer to “Shortcut Restore Procedures” on page 28 and “Restoring a True-Image of a Directory” on page 36.

---

1. Change NetBackup master servers if necessary.

   If there is more than one master server that can back up this client, ensure that you are connected to the one that performed the backup you are trying to restore. If you attempt to restore from another master server, the files will not be found. Ask your NetBackup administrator if you have questions about which master server to use.

   a. On the File menu, click Configuration.



   Refer to “File Menu” on page 86 for details on this menu.

This opens the xbp_config dialog box.

The name of the current master server appears in the Server box. When you start xbp, the server is set to the default for your client.

If you do not want to change the master server, click Cancel. If you want to change the master server, go to the next step.

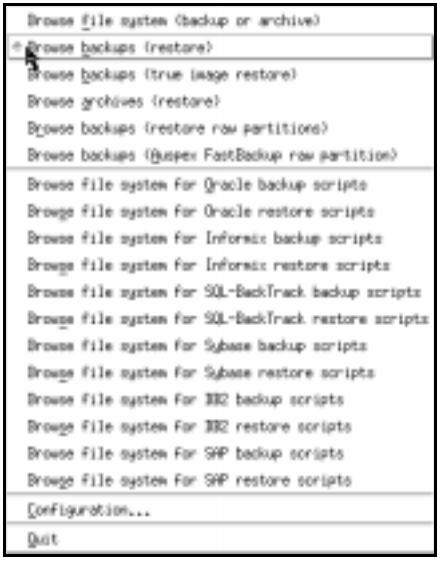
b. Type the name of the other server in the Server box.

c. Click OK.

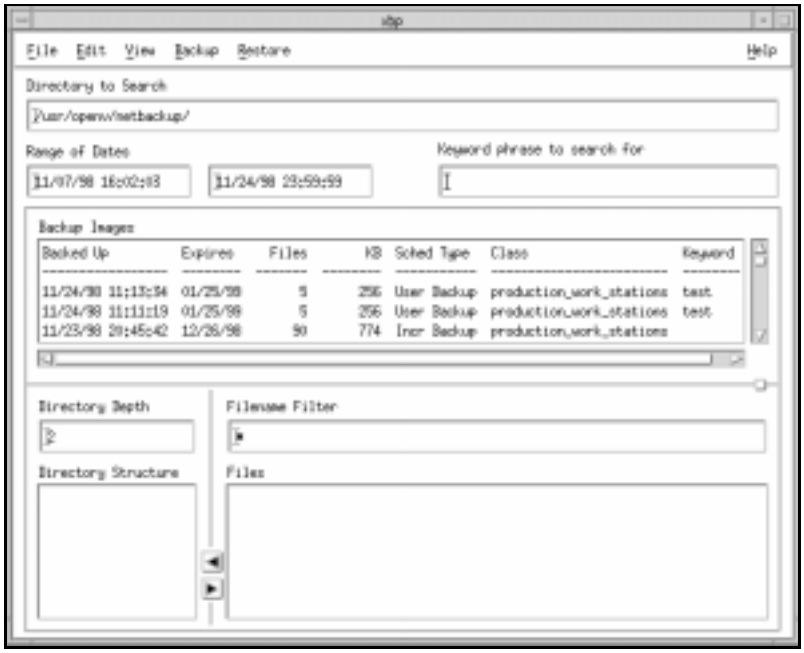
If you typed an invalid name, or if your client does not belong to a NetBackup class on that server, you get will an error. If this occurs, see your system administrator for assistance.

2. Find the file and/or directory to restore.

   a. On the File menu, click Browse Backups (Restore).



A main window similar to the following will appear.



Note: If there are a large number of backups in your range of dates, a message box may appear to indicate that you cannot search for a specific path until you update the display. If this message appears, select Update Display from the Edit menu.

b. Specify the directory to search.

In this example, we are going to restore the `release_notes.txt` file backed up in “Performing Backups and Archives” on page 14. Type the following in the Directory To Search box:

```
/usr/openv/netbackup/
```

Note: If there are any links in the path you are searching, NetBackup, by default, resolves the links so the path points to the actual file or directory. If you do not want to resolve links, click Do Not Resolve Links in Search Directory on the View menu before choosing a browse command from the File menu. See “Resolving Links” on page 41 for more information.

c. Specify the range of dates.

   When you go from backup mode to restore mode, NetBackup normally changes the starting date so that it defaults to the time of the last full backup. If you type in a specific date before changing modes, your specification is used.

   If the client belongs to more than one class, the starting date defaults to the last full backup that occurred first. For example, assume that the client belongs to ClassW1 and ClassW2 and full backups occur for both of them. If the last full backup for ClassW1 occurred before the one for ClassW2, then the display shows files ranging from the time of the ClassW1 full backup.

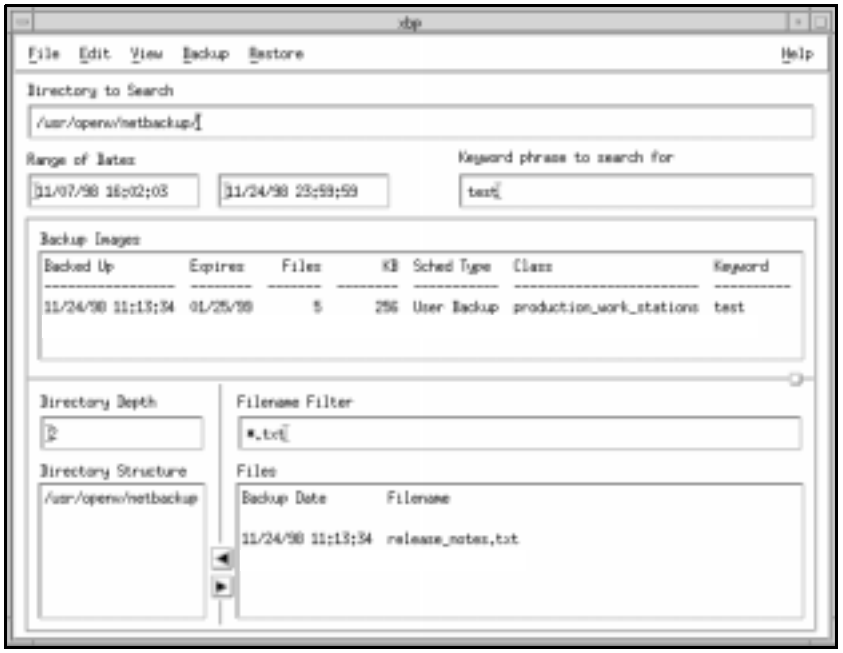
d. Specify the keyword phrase to search for.

   In Step c on page 17 of the “Performing Backups and Archives” section, you typed `test` as the keyword. So, in the Keyword Phrase to Associate with This Backup box, type `test`.

e. Type `*.txt` in the Filename Filter box.

f. On the File menu, click Browse Backups (Restore).

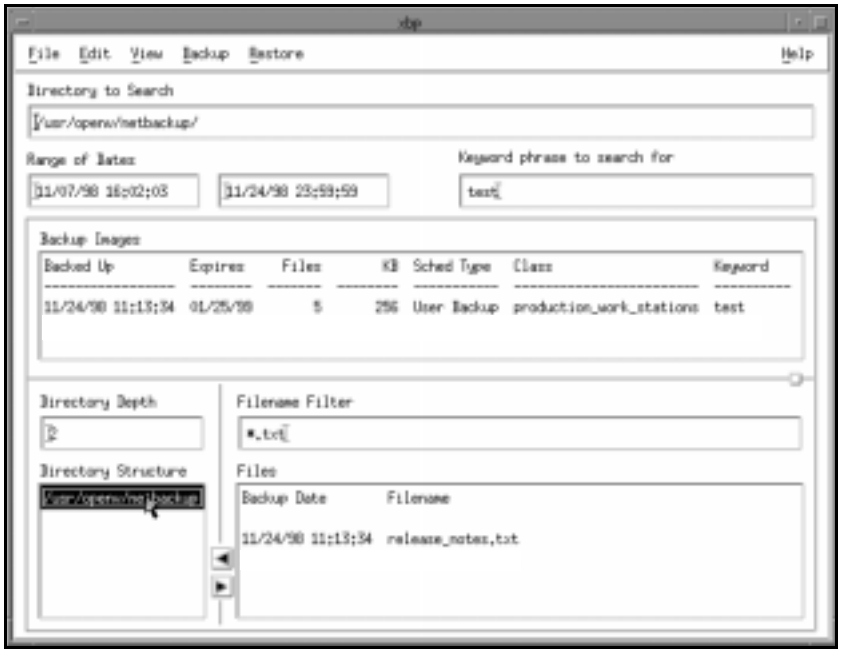
A main window similar to the following will appear.



g. Select the files and directories that you want to restore.

If the desired files or directories are not currently displayed, find them by using the methods described under “Finding and Selecting Files and Directories” on page 45. You can also specify another range of backups to search (see “Selecting Specific Backup Dates to Restore” on page 34).

In the following figure, the /usr/openv/netbackup directory is selected in the Directory Structure pane. This implicitly selects all directories and files that are below /usr/openv/netbackup in the directory tree.

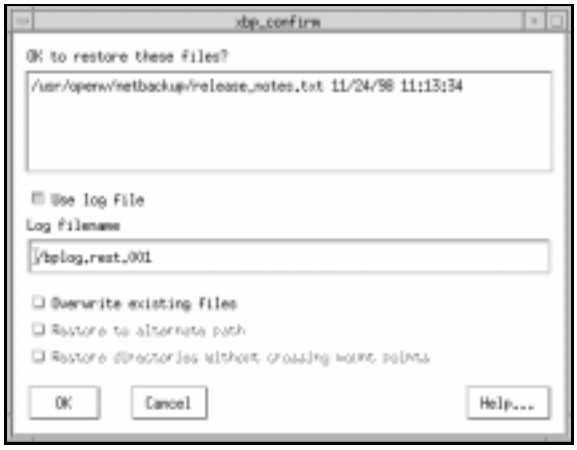


Note: If you are selecting directories on the Files pane and then change your mind and unselect a directory, it is not unselected until you have selected either Clear Selections for Current Directory or Discard Selections for Previous Directories from the Edit menu. If you use Inspect All Selections from the Edit menu, you can see what is selected to be restored.

3. Start the restore.

   a. Click Restore Search Directory from the Restore menu.

      This opens the xbp_confirm dialog box.



   b. Choose whether to use the progress log file.

      Select the Use Log File checkbox to create a log file in your home directory and write to this file as the operation progresses. The checkbox is selected when highlighted.

      The name of the log file appears in the Log Filename box. For information on checking the log, see “Checking Progress of Operations” on page 42.

   c. Select the Overwrite Existing Files checkbox.

Note: The disk partition is overwritten whether this option is set or not. The device file must exist.

      The Restore To Alternate Path checkbox and the Restore Directories Without Crossing Mount Points checkbox are enabled.

Note: Mount points inside will get restored whether or not the Restore Directories Without Crossing Mount Points checkbox is selected.

NetBackup restores files according to the original file's pathname.

- Select the Overwrite Existing Files checkbox to overwrite an existing file with the restored file, providing file permissions allow it (see "File Permissions Required By NetBackup" on page 7). The checkbox is selected when highlighted.
- Clear the Overwrite Existing Files checkbox to prevent overwriting. The restore does not occur if a file with same pathname already exists.

d. Review your selections.

4. Click OK. This will send your restore request to the server. The main window will appear.

   To return to the main window without starting the restore, click Cancel.

Shortcut Restore Procedures

The following are abbreviated procedures for common types of restore operations.

Listing the Available Backups or Archives

If you are not sure of the dates when a file or directory was backed up, you can find out by browsing the backups.

1. Type the directory that you want to restore in the Directory To Search box.
2. Leave the range of dates at the defaults (01/01/70 to the current date).

   or

   If you know the approximate range, type it in to narrow the range that will be displayed. Doing this speeds up your request.
3. On the File menu, click the desired browse for restore option.

   NetBackup updates the Directory Structure pane and the Files pane to show all backups or archives for the specified directory path and date range.

   Because NetBackup has to obtain the file information from the backups on the master server, there can be a noticeable delay before the panes appear in the restore window.

Note: If there are a large number of backups in the date range, you may be prompted to use Update Display from the Edit menu before NetBackup will search for the specific path.

Restoring the Most Recent Backup

The following explains how to restore the most recent backup that has occurred since the last full backup of your client.

1. Type the directory that you want to restore in the Directory To Search box.
2. On the File menu, click Browse Backups (Restore).

   NetBackup updates the Directory Structure pane and the Files pane to show only the files and directories that were backed up from the time of the last full backup through the most recent backup (either incremental or user directed).

   Since NetBackup has to obtain the file information from the backups on the master server, there can be a noticeable delay before the panes appear in the restore window.

Note: By default, NetBackup restores the file to its original location. To restore to an alternate location, use Specify Alternate Path from the Restore menu before starting the restore.

---

3. Select the most recent backup of the file you want to restore.

Note: If you are selecting directories on the Files pane and then change your mind and unselect a directory, it is not unselected until you have selected either Clear Selections for Current Directory or Discard Selections for Previous Directories from the Edit menu. If you use Inspect All Selections from the Edit menu, you can see what is selected to be restored.

---

4. On the Restore menu, click Restore Selected Files and Directories.

   This starts the restore.

Restoring the Most Recent Version of a Directory

Note: The following procedure will restore *all* files that existed in the directory from the time of the last full backup through the most recent backup. Files that were deleted from your online directory during that time period are also restored. If you do not want the files that were deleted from your online directory, proceed to "Restoring a True-Image of a Directory" on page 36.

You can restore the latest version of a directory with just one restore operation. The steps are the same as explained under "Restoring the Most Recent Backup" on page 29, except that here you must select a directory from the Directory Structure pane and use Restore Search Directory from the Restore menu. The restored directory has the last full backup of that directory, updated with all subsequent incremental and user backups.

There are two important things to remember when restoring a directory:

1. The restored directory has only the files that are in the range of backups you selected with the start and end dates. Therefore, these dates must include the last full backup and all other backups through the latest date you are interested in. The best way to get the most recent backup is to use the date of the last full backup as start date and the current date as the end date (this is the default at the start of a browse).
2. It is usually best to select from the Directory Structure pane. Selecting from the Files pane restores only from the backup created at the backup date and time. If that backup is for an incremental, you will restore only the files in that incremental.

Advanced Restore Operations

The topics in this section explain how to perform more specialized restore operations. Also see the section on server directed restores in the *NetBackup System Administrator's Guide - UNIX* and the *NetBackup System Administrator's Guide - Windows NT Server*.

Alternate Client Restore

The following explains how to restore a backup to an alternate client. Refer to "Basic Restore Procedure" on page 18 for a detailed restore procedure.

Note: You cannot use NetBackup on the master server to restore a file to an alternate path on a NetBackup for Novell NetWare client. For those clients, you must perform the alternate path restore with the user interface on the NetWare client.

---

1. Change NetBackup master servers if necessary.
   a. From the File menu, click Configuration.

      This opens the xbp_config dialog box.

   b. Type the name of the server in the Server box.

   c. Click OK.

      If you type an invalid name or your client does not belong to a NetBackup class on that server, you will get an error. See your system administrator for assistance.

2. From the Restore menu, click Specify Alternate Path.

   This opens the xbp_altpath dialog box.

   a. Type the paths in the Restore From box and the Restore To box.

      You can also use the Current Directory button to change paths to their default value, which is your current directory.

      You cannot specify more than one alternate path. If you specify a path that does not exist, NetBackup creates it when restoring the file.

b. Before restoring files that are links, choose whether to update those link pathnames:

- Select the Rename Hard Links checkbox to rename the hard link pathnames. Clear the Rename Hard Links checkbox if you do not want to rename the hard link pathname.
- Select the Rename Soft Links checkbox to rename the soft link pathnames. Clear the Rename Soft Links checkbox if you do not want to rename the soft link pathname.

Checkboxes are selected when highlighted.

Note: If you are restoring system files to a disk other than the current system disk and plan on using the other disk as the system disk with the original file paths when the restore is completed, we suggest that you select the Rename Hard Links checkbox and clear the Rename Soft Links checkbox. This will let you use the other disk and have the correct file paths.

---

c. Confirm or cancel the changes as follows:

- Click OK to use the paths indicated in the Restore From box and the Restore To box on the next restore.

  or

- Click Cancel to cancel the changes so the previous paths are used.

3. On the File menu, click Browse Backups (Restore).
4. Specify the directory to search, the range of dates, the keyword phrase to search for, the directory depth, and the filename filter for the files you want to restore.
5. Find and select the files and directories that you want to restore.
6. Click the appropriate restore command on the Restore menu.

   This opens the xbp_confirm dialog box.

   a. Select the Use Log File checkbox to create a log file in your home directory and write to this file as the operation progresses.

b. Select the Overwrite Existing Files checkbox to overwrite an existing file with the restored file, providing file permissions allow it (see “File Permissions Required By NetBackup” on page 7). The checkbox is selected when highlighted.

   Clear the Overwrite Existing Files checkbox to prevent overwriting. The restore does not occur if a file with same pathname already exists.

c. Select the Restore To Alternate Path checkbox to confirm the restore to alternate path. The checkbox is selected when highlighted.

   Clear the Restore To Alternate Path checkbox to cancel.

d. Select the Restore Directories Without Crossing Mount Points checkbox to skip over file systems mounted in the selected directories. The checkbox is selected when highlighted.

   Clear the Restore Directories Without Crossing Mount Points checkbox to restore file systems that are mounted in the selected directories.

e. Review your selections.

f. Click OK to start to start the restore. The main window will appear.

   To return to the main window without starting the restore, click Cancel.

Selecting Specific Backup Dates to Restore

By default, NetBackup shows the files and directories that were backed up from the time of the last full backup through the most recent backup. If the client belongs to more than one class, the default display starts with the last full backup that occurred first. For example, assume that the client belongs to ClassW1 and ClassW2 and full backups occur for both of them. If the last full backup for ClassW1 occurred before the one for ClassW2, then the display shows files ranging from the time of the ClassW1 full backup.

The default range will satisfy the majority of your needs for restoring files. There will be times, however, when you must restore a file that was not backed up during the default time period. For example, a file that was deleted prior to the last full backup does not appear in the default display. In this case, you must use the Backup Images pane or specify a date range to select a backup that does contain the file.

Assuming that you have already done a browsed backups for a restore and the default display does not show the desired files or directories.

1. Specify the range of backup dates that you believe contains the desired files and directories:

   - Type the desired backup dates in the Range of Dates boxes.

     or

   - Select backups from the Backup Images pane.

     The Range of Dates boxes will now contain the oldest and newest backup dates in the range of backups that you selected.

Note: Narrow the date range as much as possible to speed up your search.

2. Position the pointer over any of the boxes and press Enter (or click Update Display on the Edit menu).

   NetBackup updates the Directory Structure pane and the Files pane to show only the files and directories that it finds in the range of backups that you specified. You can then select the backup you want and restore it.

   Since NetBackup has to obtain the file information from the backups on the master server, there can be a noticeable delay before the panes appear in the restore window.

Restoring an Earlier Version of a Directory

Note: The following procedure will restore all files that were backed up during the range of backup dates that you search for files to restore. This includes files that were deleted from your online directory after they were backed up. If you do not want the deleted files, use the procedure described in "Restoring a True-Image of a Directory" on page 36.

To restore a version of a directory that existed prior to the last full backup, select only the backups that include the desired version of the directory.

For example, assume that you want the `/home/hrp/` directory as it existed on 10/5/95.

1. Browse all dates and examine the Files pane and the Backup Images pane.

   In our example, we find that the following backups occurred.

   ```
   Backup Date and Time       Type of Backup
   10/10/95  22:01:20  . . .  Full Backup  . . .
   10/09/95  16:30:27  . . .  Incr Backup  . . .
   10/02/95  18:05:41  . . .  Incr Backup  . . .
   09/29/95  19:36:55  . . .  Incr Backup  . . .
   09/25/95  18:06:15  . . .  Full Backup  . . .
   09/20/95  16:06:21  . . .  Incr Backup  . . .
   09/17/95  22:06:44  . . .  Full Backup  . . .
   ```

2. Set the start date and end date to include the required backups.

   In this example, we set them as follows:

   - Start date to 09/25/95. This the last full backup preceding 10/5/95.
   - End date to 10/02/95. This is the incremental that includes the 10/5/95 version of the directory. The next date is 10/09/95, but that has changes we do not want.

3. Start another browse using Update Display from the Edit menu.

4. Select `/home/hrp/` from the Directory Structure pane and the check the Files pane to see if it shows the files you need.

Note: By default, NetBackup restores the directory to its original location. To restore to an alternate location, use Specify Alternate Path from the Restore menu before starting the restore.

Note: If you are selecting directories on the Files pane and then change your mind and unselect a directory, it is not unselected until you have selected either Clear Selections for Current Directory or Discard Selections for Previous Directories from the Edit menu. If you use Inspect All Selections from the Edit menu, you can see what is selected to be restored.

5. On the Restore menu, click Restore Search Directory.

Restoring a True-Image of a Directory

Note: You can restore a true-image of a directory only if the NetBackup class that is backing up your files and directories is configured to collect true-image restore information. If you are in doubt, ask your NetBackup administrator.

What is a True-Image Restore

A true-image restore of a directory, by default, restores the directory so its contents are exactly what they were at the time of the most recent automatic full or incremental backup. Files deleted prior to the specified backup are not restored.

A true-image restore is the best choice if, for example, you have recently cleaned up a directory by deleting unwanted files and now want to restore the latest version without having to repeat your cleanup. It is also possible to restore the true-image of an earlier version of a directory.

Note: NetBackup does not allow a true-image restore that is based on the time of a user-directed operation. However, NetBackup does use the data from a user-directed operation when performing a true-image restore if the user backup is more recent than the latest automatic full or incremental backup.

To illustrate the concept of a true-image restore, consider the following table, which shows the contents of a directory named:

`/home/abc/doc/`

during a series of backups performed between 12/01/95 and 12/04/95.

Day Type of Backup	12/01/95 (Full)	12/02/95 (Incr)	12/03/95 (Incr)	12/04/95 (User Back)	12/04/95 (Incr)
	file1	file1	file1	file1	file1
	file2	file2	file2	file2	file2
	dirA/fileA	dirA/fileA	dirA/fileA	dirA/fileA	-
	dirB/fileB	-	-	-	-
	file3	-	-	-	-
				dirC/fileC	-
				file4	file4

Assume that you are going to restore the most recent version of the directory.

- If you perform a standard restore as explained under “Restoring the Most Recent Version of a Directory” on page 30, NetBackup restores all files and subdirectories that were backed up during the time period from 12/01/95 (last full backup) through 12/04/95.

  ```
  file1
  file2
  dirA/fileA
  dirB/fileB
  file3
  dirC/fileC
  file4
  ```

- If you restore a true-image backup, NetBackup restores only the files and directories that existed at the time of the incremental backup on 12/04/95.

  ```
  file1
  file2
  file4
  ```

  NetBackup does not restore anything deleted prior to the 12/04/95 incremental backup.

Notice that the restored directory does not include the dirA and dirC subdirectories, even though they were backed up on 12/04/95 with a user-directed backup. NetBackup did not restore these directories because they did not exist at the time of the incremental backup that was the reference for the true-image restore.

True-Image Restore Procedure

In this example, assume you are recovering `/home/abc/doc/` as it existed on 12/04/95. Also assume you just started the `xbp` interface, so Browse File System (Backup or Archive) is selected with all settings at the defaults.

1. On the File menu, click Browse Backups (True Image Restore).

   The Directory Structure pane and the Files pane show the directories that are available for true-image restores. For our example, the default display shows the following.

```
Directory Structure                  Files
/home/abc
  doc                  12/04/95   20:05:22   doc/
    dirA               12/03/95   21:10:50   doc/
    dirB               12/02/95   20:10:34   doc/
                       12/01/95   20:15:34   doc/
```

   Notice that the panes show only directories. Individual files do not appear because true-image restores are intended only for restoring entire directories. To list or select individual files, use the Browse Backups (Restore) mode.

Note: If NetBackup does not find any directories, check the range of dates, path, and directory depth. If these settings are correct and no directories are found, check with the administrator on the master server to see if the NetBackup class that is backing up your files and directories is configured to collect true image restore information.

---

2. Select the desired range of dates.

   The default start date is the time of the last scheduled full backup of the class. Use the default unless you are restoring a version that existed before the latest full backup.

   The default end date is the current date. If necessary, change this value to reflect the date that you want to recover.

   In this example, we are recovering the most recent version of the directory so we leave the date range at the defaults.

   - Start date is 12/01/95
   - End date is 12/04/95

3. If you changed the range of dates in Step 2, click Update Display on the Edit menu to update the panes.

   This step is unnecessary in our example, but is required if you change the range of dates.

4. From the Files pane, select the directory that you want to restore (NetBackup does not let you select from the Directory Structure pane for a true-image restore).

   In our example, we select the 12/04/95 version of `/home/abc/doc/` from the Files pane.

Note: If you are selecting directories on the Files pane and then change your mind and unselect a directory, it is not unselected until you have selected either Clear Selections for Current Directory or Discard Selections for Previous Directories from the Edit menu. If you use Inspect All Selections from the Edit menu, you can see what is selected to be restored.

Note: By default, NetBackup restores the directory to its original location. To restore to an alternate location, use Specify Alternate Path from the Restore menu before starting the restore.

---

5. On the Restore menu, click Restore Selected Files and Directories (Restore Search Directory is not available for a true-image restore).

   In our example, the restored directory has:

   ```
   file1
   file2
   file4
   ```

   This is the directory as it was at the time of the incremental backup that occurred on 12/04/95.

   Notice that if you are overwriting the directory you are restoring, NetBackup does not delete files that are currently in the directory but not in the true-image restore backups.

   In our example, if you had created a file5 after the incremental backup occurred on 12/04/95, but before doing the restore, then the contents of the directory after the restore would have been:

   `file1`
   `file2`
   `file4`
   `file5` (this is the new file that is not in any of the backups)

Resolving Links

When searching for files to restore, you can choose whether to have NetBackup resolve links that may exist in the search path. If you resolve links, NetBackup automatically changes the path so it points to the actual file or directory. Otherwise, NetBackup uses the path you type in.

`xbp` resolves links by default, unless you click Do Not Resolve Links in Search Directory on the View menu before starting your search.

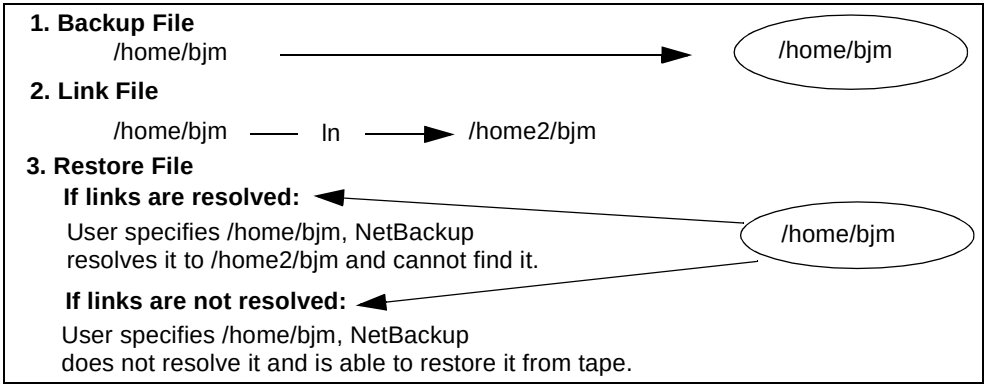
Note: NetBackup does not resolve links if you use wildcard characters in the search directory path.

It is usually best to resolve links. There are exceptions such as the following:

- If you backed up a file that was not a link and, since then, the file path was linked to a different directory.

  For example, assume you backed up `/home/bjm` and this directory is now a link to `/home2/bjm` . If you resolve links during the restore, NetBackup will not find the file because it searches for `/home2/bjm` and `/home/bjm` was the path you backed up.

- If you are restoring a file to your machine that was backed up by another client. There will be a problem if the path on the other client exists as a link on your machine.



Checking Progress of Operations

When you start a NetBackup operation, you can have NetBackup create a log file in a directory of your choice and write to this file during the course of the operation. By default, NetBackup creates a log file in your home directory of the form:

`bplog.bkup.`*n* (for backups)

`bplog.arch.`*n* (for archives)

`bplog.rest.`*n* (for restores)

Where *n* is a number that is unique for each file.

The following figure illustrates a xbp_progress dialog box.

This dialog box lists the progress log files that are in your home directory and lets you view them. (You can also read log files by using the `more` command or a UNIX file editor.)

The log information is in two scrollable panes:

- Log files in your $HOME directory (upper section of dialog)
- Contents of selected log file (middle section of dialog)

View the contents of a log by selecting and highlighting its entry in the upper pane. The pane in the middle section displays any entries that NetBackup makes in the log file.

Select the Automatic Refresh checkbox for automatic refresh. You can force a refresh by reselecting the same log file. The checkbox is selected when highlighted.

When you are through checking progress, click Close to return to the xbp_main window.

Interpreting Progress Logs

The log messages notify you of important events that occur during the operation. These messages can have acronyms that specify the error level severity of an event.

The error level acronyms are as follows:

INF	Informational message (no error occurred)
TRV	Trivial error message
WRN	Warning error message
ERR	Error message
FTL	Fatal error message

Progress logs also list the media required for a NetBackup operation. For backups, the progress log lists the media IDs as NetBackup requests them during the course of the backup. For restores, the progress log begins by listing all the media IDs that NetBackup needs to recover the backups containing the files. If a backup or archive is split across more than one media ID, a restore log lists all the media but NetBackup uses only what it needs to restore the requested files.

Check the status at the end of the log to determine the final results of the NetBackup operation. If NetBackup was unable to backup or restore all the requested files, check the exit status that appears a few lines before the end of the log. This status will usually reveal the cause of the problem.

CAUTION! When you perform a restore operation on a DomainOS system and specify to *NOT* overwrite existing files, NetBackup does not log anything for the files that already exist. For example, assume file A exists and you restore it without overwriting existing files, the following appears in the progress log:

```
Starting restore:
Restore complete:
```

The log does not show file A because it already exists.

Mail Notifications

You can configure a `bp.conf` file in the client `$HOME` directory so the user will receive mail notifications on the results of user-directed operations. Refer to the *NetBackup System Administrator's Guide - UNIX* or the *NetBackup System Administrator's Guide - Windows NT Server* for instructions on configuring that file.

Deleting Progress Log Files

To delete unnecessary log files from your directory, open the xbp_progress dialog box, select the log files and click Delete Log File. You can also delete logs manually by using system commands. Because they can warn you of problems, it is usually best to read the log files before deleting them.

Obtaining a List of Your Backups and Archives

You can use the `bplist` command to get a listing.

The `bplist` command lists backups and archives according to criteria, such as specific file or directory, client name, and range of dates. You can print a list by sending it to a file and then printing the file.

For detailed instructions on using this command, see the description of `bplist(1M)` in Appendix A, “Man Pages.”

Finding and Selecting Files and Directories

This section explains what you need to know to find and select files and directories. See Chapter 5, “Reference Guide to the Interfaces” for more information on menus, text boxes, and other items mentioned in the following descriptions.

Navigating in the Directory Tree

Go Lower in the Directory Tree

To go lower in the directory tree:

- Double click on a lower level directory in the Directory Structure pane.

  or

- Click the directory and press Enter.

The Directory To Search box now shows the selected directory and the Directory Structure pane and the Files pane are updated accordingly.

You can also type the directory path in the Directory To Search box and press Enter. This has the same effect as clicking the directory in the Directory Structure pane.

Go Higher in the Directory Tree

To go higher in the directory tree, type the path of the higher level directory in the Directory To Search box and press Enter. Pressing Enter updates the display (another way to update the display is to click Update Display on the Edit menu).

Show the Contents of a Directory

To see files that are in a directory, click the directory in the Directory Structure pane. The contents appear in the Files pane.

Filter by Date

To show only files that were modified or backed up within a certain date range, set the Range of Dates boxes to include those dates and press Enter to update the display:

- For a backup, specify the last modified dates.
- For a restore, specify backup dates.

You could set the range of dates to show only those modified before or after a certain date. For example, you could pick only today's files.

Filter by File Name

To show only specific file names that are under the Directory To Search box, use the Filename Filter box. This makes selection easier if you want only specific files but there are many files under Directory To Search box. For example, you can find files ending in `.doc` by using the filter expression `*.doc`. When `xbp` starts, the filter is set to `*` and displays everything.

Change the Number of Directory Levels Displayed

To set the number of directory levels displayed, change the number in the Directory Depth box (default is 2).

Selecting for Backup, Archive, or Restore

To select a file or directory in the Files pane, click its name to highlight it. Clear a file or directory by clicking it again:

- To select everything in the current directory, click Select All in Current Directory on the Edit menu. Clear an individual file or directory by clicking it again.
- To clear all selections for the current directory, click Clear Selections for Current Directory on the Edit menu.

CAUTION! If you click on Select All in Current Directory on the Edit menu to perform a NetBackup operation, and the directory you select is large, the operation can be very slow. Instead of selecting everything, consider using Restore Search Directory, Backup Search Directory or Archive Search Directory.

During a backup, selecting a directory from the Files pane implicitly selects everything in the directory, including subdirectories and files. During a restore, selecting a directory in the Files pane restores only the files and subdirectories that are in the backups that occurred during the indicated range of dates.

You select from the Directory Structure pane in the same manner as from the Files pane, except that you can select only one item at a time. When you select a directory to highlight it, the Files pane shows the directories and files in this directory.

When you are through selecting, start the NetBackup operation by choosing the appropriate option from the Backup menu or Restore menu. This opens the xbp_confirm dialog box and adds your selections to that dialog. If you made previous selections and opened the xbp_confirm dialog box but did not confirm your selections (and therefore did not perform the actual NetBackup operation), `xbp` remembers them and keeps them in the xbp_confirm dialog box. This lets you return to the main window and make changes before confirming.

To clear all selections from the xbp_confirm dialog box, click Discard Selections for Previous Directories on the Edit menu.

Previewing Selected Files

You can view the list of selected files at any time by clicking Inspect All Selections on the Edit menu. This opens a dialog box similar to xbp_confirm, except that it does not have an OK button.

Change Directory Structure Pane and the Files Pane Format

You can change the following aspects of how directories and files appear in the panes.

Show Directory Structure

To indent items in the Directory Structure pane to show the directory hierarchy, click Indented Tree Structure on the View menu. This is the default. To view the full pathnames of directories in the Directory Structure pane, click Full Pathnames on the View menu.

Show Number of Directory Levels Shown

To modify the number of subdirectory levels that appear in the Directory Structure pane and the Files pane, modify the Directory Depth box.

Show Most Recent or All Backups

For a restore, you can choose from the View menu to display either All Backup Dates For Each File or Only Most Recent Backup Date.

Show File Details

To view file details (for example, file size and write permissions), click Verbose Display Of Attributes and Filenames on the View menu. To view filenames without details, click Brief Display Of Filenames (default).

Update the Display

To update the NetBackup window to show the most recent changes (such as file additions or deletions), click Update Display on the Edit menu.

Using the Menu Interface

This chapter explains how to use the NetBackup menu interface program, `bp`, to perform NetBackup operations. The menu interface is character-based (curses) so you can use it at any terminal (or terminal emulation window) for which you have a `termcap` or `terminfo` definition. You can also use the menu interface on any terminal that has the prerequisites for the graphical interface, `xbp`. The menu interface has the functionality of `xbp` but with a menu-driven presentation.

The purpose of this chapter is to provide step-by-step procedures for using the menu interface. If you need information about specific screens or menu options within the interface, refer to Chapter 5, “Reference Guide to the Interfaces.”

The areas covered here are:

- Starting the Menu Interface
- Performing Backups or Archives
- Performing Restores
- Resolving Links
- Checking Progress of Operations

Starting the Menu Interface

Start the menu interface program by typing the `/usr/openv/netbackup/bin/bp` command:

When `bp` starts, the Main Menu appears on your screen as shown.

The name of your client and NetBackup master server are shown at the top of the menu. If more than one master server is available to your client, you can use the M (Change Master Server...) option on the Backup Menu menu to select another server.

Performing Backups or Archives

The following procedure explains how to perform a backup of files, directories, or raw partitions or to archive files and directories. The main difference between backups and archives is that an archive deletes the designated directories and files from your disk after successfully backing them up.

1. Type the following command line:

   ```
   /usr/openv/netbackup/bin/bp
   ```

   The Main Menu will appear.

2. Select the B (Backup...) option. The Backup Menu will appear.

   Refer to “Backup Menu” on page 116 for details on this menu.

   Check the name in the Master Server field. This field shows the name of the server to which NetBackup will send your backups. When you start the bp interface program, this field is set to the default for your client.

You should not have to switch master servers unless the administrator has moved the backups. If the change becomes permanent, the administrator should change your default to reflect the other master server.

To change master servers, choose the M (Change Master Server...) option and type the name of the other server. If you type an invalid name or your client does not belong to a class on that server, you will get an error.

3. Select the B (Backup Files and Directories...) option. The Backup of Files and Directories menu will appear.

4. Check the Path field at the top of the menu to see if it is set to the directory where you want to start the search for the desired files. At start-up, NetBackup sets Path to your current working directory.

   In this example, we are going to backup the `release_notes.txt` file located in the `/usr/openv/netbackup/` directory.

   a. To change Path, choose the P (Change Path...) option from the Backup of Files and Directories menu. The following will appear.

   b. Type the following for the New File Path.

      `/usr/openv/netbackup/`

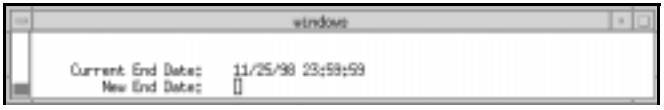
   c. Press Enter to return to the Backup of Files and Directories menu.

5. Check that the Start Date and End Date fields include the last-modified dates of the files you want to back up.

   a. To change the range of dates, select the D (Change Date Range...) option from the Backup of Files and Directories menu. The following will appear.

   b. Type the new start date.

   c. Press Enter. The following will appear.



   d. Type the new end date.

   e. Press Enter to return to the Backup of Files and Directories menu.

6. Type the keyword phrase you want to use to identify the backup. In this example, we will use the keyword `bptest`.

   a. Select the K (Change Keyword Phrase) option from the Backup of Files and Directories menu. The following will appear.

   b. Type the keyword `bptest`.

   c. Press Enter to return to the Backup of Files and Directories menu.

7. Select the files and directories you want to back up.

   a. Select the S (Select Files and Directories...) option from the Backup of Files and Directories menu. The following will appear.

   b. Use the menu options at the bottom of the screen to browse the file system and select the desired files and directories.

   c. Choose the (S)elect option to select the `release_notes.txt` file. An asterisk (*) will appear to the left of the selected file.

   If you select a directory, all files and directories below the selected directory will be selected. An asterisk (*) will appear to the left of the selected directory.

   d. Select the (O)k option to return to the Backup of Files and Directories menu.

8. Preview the files and directories you have selected to back up.

   a. Select the E (Edit/View Selected Files...) option from the Backup of Files and Directories menu. The following will appear.

   This screen lists your selections and lets you make changes.

   b. Make sure the `release_notes.txt` file appears in the list.

   c. Select the (O)k option to return to the Backup of Files and Directories menu.

9. Start the backup operation.

Note: You can return to the Backup of Files and Directories menu at any time up to starting the operation by pressing the Escape key.

a. Select the I (Initiate Backup) option from the Backup of Files and Directories menu. The following will appear.

b. Type Y to create a log file and write to this file as the operation progresses. The following will appear.

If you do not want logging, type N to start the operation and go to Step d.

c. Press Enter to accept the default (shown in parentheses), or type a new path and press Enter. The operation begins when you press Enter. The following will appear.

d. Press any key to return to the Backup of Files and Directories menu.

10. Select the Q (Quit Menu) option to return to the Main Menu.

Performing Restores

NetBackup restores files according to the original file pathname. If current files have the same names as backed-up files, you can pick whether to overwrite the current files (file permissions must allow overwriting). See “File Permissions Required By NetBackup” on page 7 for an explanation of how NetBackup restores files in various situations.

Note: When restoring raw partitions, ensure that the partition is not mounted and not in use. Also ensure that the device file for the raw partition exists prior to the restore.

---

1. Type the following command line:

   ```
   /usr/openv/netbackup/bin/bp
   ```

   The Main Menu will appear.

2. Choose the R (Restore...) option from the Main Menu. The Restore Menu appears.

Refer to “Restore Menu” on page 123 for details on this menu.

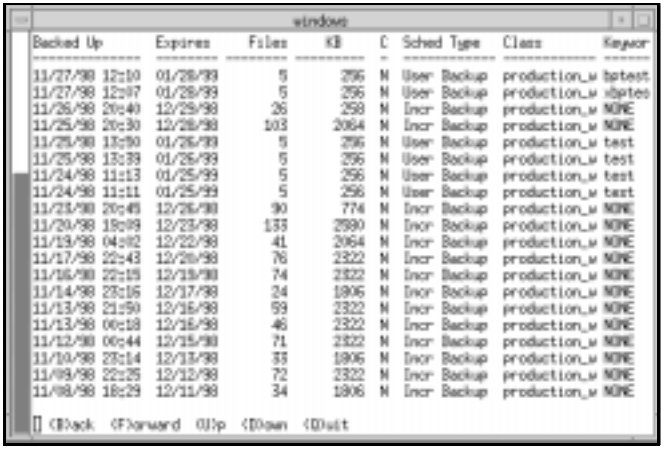
If your site supports more than one master server and you want to browse or restore files from another server, check the Master Server field at the top of the screen. When you start the bp interface program, the Master Server field shows the default for your client.

To browse a backup on another master server, choose the M (Change Master Server...) option and type the name of the other server. If you type an invalid name or your client does not belong to a class on that server, you get an error.

3. Select the B (Restore Files and Directories from Backups...) option. The Restore Backups menu will appear.

4. View the backups for your client.

   a. Choose the L (List Backup Images...) option from the Restore Backups menu.

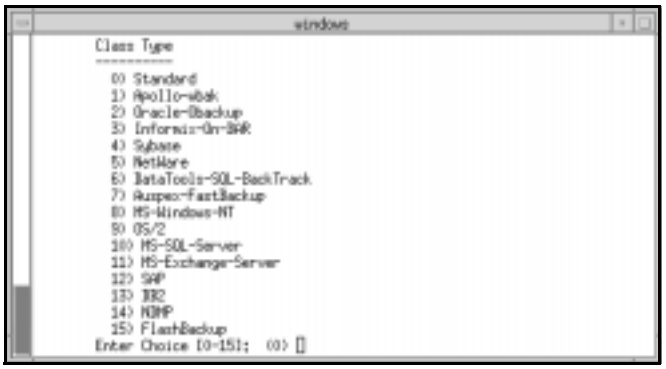


   This screen shows the backups created. Notice that the keyword `bptest`, entered during the backup procedure described in “Performing Backups or Archives” on page 51, is displayed under the keyword column. For this example, we will be restoring from the backup with the `bptest` keyword.

   b. Type <Q>uit to return to the Restore Backups menu.

5. Check the Class Type field to see if it is set correctly.

   a. To change the class type, select the Y (Change Class Type) option from the Restore Backups menu.



   The current class type appears in parenthesis.

   b. Type the number for the new class type.

   c. Press Enter to return to the Restore Backups menu.

6. Check the Path field at the top of the Restore Backups menu to see if it is set to the directory you want to start the search. At start-up, the current path is set to the directory from which you start the interface program.

   a. To change the path, select the P (Change Path...) option. The following appears.

   For this example, we will be changing the path to `/usr/openv/netbackup`.

b. Type the new file path.

```
/usr/openv/netbackup
```

The search begins in this directory and goes down the directory tree.

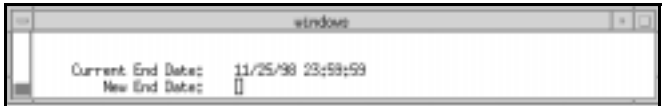
c. Press Enter to return to the Restore Backups menu.

7. Check the Start Date and End Date fields to see if the range of dates includes the backup dates of the files you want to restore.

a. To change the range of dates, select the D (Change Date Range...) option from the Restore Backups menu. The following will appear.

b. Type the new start date.

c. Press Enter. The following will appear.



d. Type the new end date.

e. Press Enter to return to the Restore Backups menu.

8. Select the files and directories you want to restore.

   a. Select the S (Select Files and Directories...) option from the Restore Backups menu to search for files and directories that belong to the client and meet the path and date criteria. The following will appear.

   If you are restoring an entire directory and the range of dates includes more than one backup date for files in the directory, NetBackup restores only the most-recent backups. To restore earlier versions, you can either:

   - Restore by file rather than by directory and select the files with the desired backup date.

     or

   - Return to Step 7 and specify only the backup dates you desire.

     Here, you can restore the entire directory. Before proceeding, however, decide whether you want to overwrite all files in that directory with the earlier versions. If you do not want to overwrite existing files, you can restore the directory to an alternate path (see Step 10 of this procedure).

   You may also want to refer to “Shortcut Restore Procedures” on page 28 and “Restoring a True-Image of a Directory” on page 68.

   b. Use the menu options at the bottom of this screen to move the display arrow to the line with the `release_notes.txt` file.

c. Select the (S)elect option to select the `release_notes.txt` file. An asterisk (*) will appear to the left of the selected file.

If you had selected a directory, all directories and files below the selected directory would have been implicitly selected. An asterisk (*) will appear to the left of the selected directory.

d. Select the (O)k option to return to the Restore Backups menu.

9. Preview the files and directories you have selected to restore.

a. Select the E (Edit / View Selected Files...) option from the Restore Backups menu. The following will appear.

This screen lists your selections and lets you make changes.

b. Make sure the `release_notes.txt` file appears in the list.

c. Select the (O)k option to return to the Restore Backups menu.

10. Set up an alternate restore path.

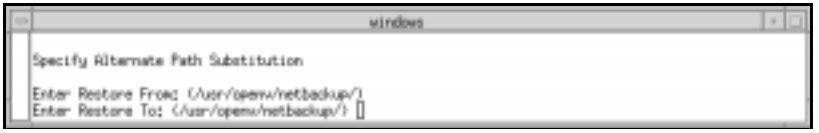
Note: NetBackup does not support alternate path restores on DomainOS systems (for example, Apollos).

This is an optional step, used to restore files to a different path on the same client. In the following example, we will set up an alternate path restore from `/usr/openv/netbackup` to `/usr/openv/netbackup/bin`.

Note: You cannot use NetBackup on the master server to restore a file to an alternate path on a NetBackup for Novell NetWare client. For those clients, you must perform the alternate path restore with the user interface on the NetWare client.

a. Choose the A (Specify Alternate Path...) from the Restore Backups menu. The following will appear.

b. Press Enter. The following will appear.



c. Type the following path in the Enter Restore To field.

`/usr/openv/netbackup/bin`

d. Press Enter. The following will appear.

e. Type Y to use the indicated Restore From and Restore To paths on the next restore. The following will appear.

Type N to cancel the changes so the previous paths are still used.

f. Press any key to return to the Restore Backups menu.

11. Start the restore operation.

a. Type I (Initiate Restore) option from the Restore Backups menu. The following will appear.

CAUTION! The overwrite option is ignored during raw partition restores. The device file must exist and the disk partition is overwritten whether this option is set or not.

b. Type Y to overwrite existing files. The following will appear.

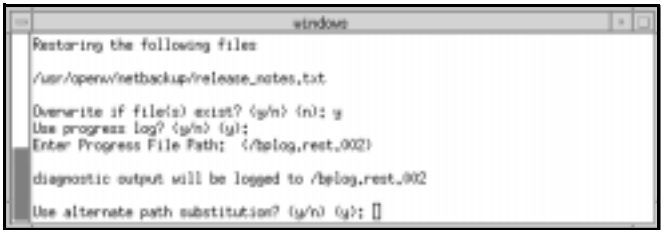
Type N to if you do not want to overwrite existing files.

c. Type Y to create a log file and write to this file as the operation progresses. The following prompt will appear.

If you do not want logging, type N to start the operation and go to Step d.

d. Press Enter to accept the default (shown in parentheses), or type a new path and press Enter. The operation begins when you press Enter.

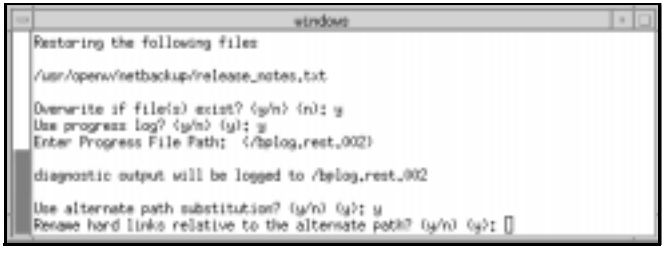
If you have previously selected an alternate-restore path (see Step 10) the "Use alternate path substitution?" prompt appears:



To cancel the restore to alternate path, type N to start the restore operation and ignore the alternate path.

e. Type Y to use an alternate path.

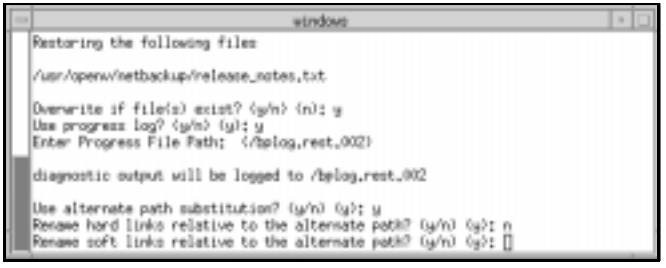
f. Press Enter. The following will appear.



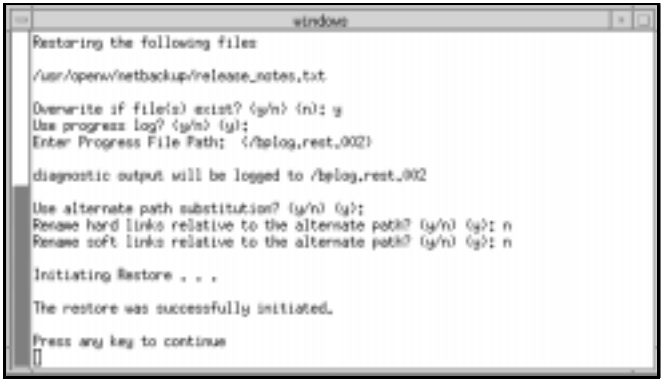
Note: If you are restoring system files to a disk other than the current system disk and plan on using the other disk as the system disk with the original file paths when the restore is completed, we suggest that you specify Y (yes) on Rename Hard Links and N (no) on Rename Soft Links. This will allow you use the other disk and have the correct file paths.

If there are links in the path you are searching, NetBackup prompts you as to whether you want to resolve the links so the path points to the actual file or directory. If you do not want to resolve links, answer N (no) to the prompt. See “Resolving Links” on page 74 for more information.

g. Type N. The following will appear.



h. Type N. The restore operation begins when you press N. The following will appear.



i. Press any key to return to the Restore Backups menu.

Restoring a True-Image of a Directory

A true-image restore will restore the contents of a directory to what it was at the time of a selected automatic full or incremental backup. See “Restoring a True-Image of a Directory” on page 36 for an overview of true-image recovery. The concepts explained there for the graphical interface also apply to the menu interface.

Note: NetBackup does not support true-image restores on DomainOS clients.

1. Select the D (Restore From True Image Backups...) option from the Restore Menu. The Restore True Image Backups menu appears.

2. Select the D (Change Date Range...) option from the Restore True Image Backups menu.
   - The default start date is the time of the last scheduled full backup of the class. Use the default unless you are restoring a version that existed before the latest full backup.
   - The default end date is the current date. If necessary, change this value to the reflect the date that you want to recover.

   In this example, we are recovering the most recent version of the directory so we leave the date range at the defaults.

3. To view the backup list for true-image restore backups, choose the L (List TIR Backup Images...) from the Restore True Image Backups menu.

4. To change the path, Select the P (Change Path...) option from the Restore True Image Backups menu.

   Type the directory where you want to start searching for the desired backups. Searching begins in this directory and goes down the directory tree.

   To search for a specific directory, type its complete path at the prompt.

5. Select the S (Select Files and Directories...) option from the Restore True Image Backups menu to search for directories that belong to the client and meet the path and date criteria.

   Individual files do not appear and cannot be selected because true-image restores are intended only for restoring entire directories. To list or select individual files in a true-image restore backup or range of backups, use the Restore Backups menu.

   A true-image restore will restore files that existed in the directory AT THE TIME of the incremental backup. Files that did *not* exist at the time of the incremental backup will not be restored.

Note: If NetBackup cannot find any directories, check your range of dates, path, and directory depth. If these settings are correct and no directories are found, check with the administrator on the master server to see if the NetBackup class that is backing up your files and directories is configured to collect true-image restore information.

---

6. Select the files or directories you want to restore.

   a. Use the menu options at the bottom of the screen to find and select the desired directory.

   b. When you are through selecting, select the (O)k option to return to the Restore True Image Backups menu.

7. Preview the files and directories you selected to restore.

   a. Select the E (Edit/View Selected Files...) option from the Restore True Image Backups menu.

   b. Check that the directories you selected appear in the list.

   c. Select the (O)k option to return to the Restore True Image Backups menu.

8. If you want to restore to a directory other than the one from which the files were originally backed up, choose A (Specify Alternate Path...) from the Restore True Image Backups menu.
9. Type I (Initiate Restore) option to bring up the Initiate Restore screen.
10. Answer the prompts to start the restore.

    If you are overwriting the directory you are restoring, NetBackup does not delete files that are currently in the directory but not in the true-image restore backups.

Alternate Client Restore

Note: You cannot use NetBackup on the master server to restore a file to an alternate path on a NetBackup for Novell NetWare client. For those clients, you must perform the alternate path restore with the user interface on the NetWare client.

1. Choose the R (Restore...) option from the Main Menu. The Restore Menu appears.
2. Select the B (Restore Files and Directories from Backups...) option. The Restore Backups menu will appear.
3. Change the source client.
   a. Select the B (Change Source Client...) option from the Restore Backups menu. The following appears.

   The current client appears in parenthesis.
   b. Type the client name from which you want to browse and restore files.
   c. Press Enter to return to the Restore Backups menu.
4. Change the destination client.
   a. Select the T (Change Destination Client) option from the Restore Backups menu. The following appears.

   The current client appears in parenthesis.
   b. Type the client name to which you want to restore files.

Note: The destination client must be of the same class type as the source client.

   c. Press Enter to return to the Restore Backups menu.

5. Check the class type for the source client and the destination client.
   a. To change the class type, select the Y (Change Class Type) option from the Restore Backups menu. The current class type appears in parenthesis.
   b. Type the class type for the source client and the destination client.
   c. Press Enter to return to the Restore Backups menu.
6. Check the Path field at the top of the Restore Backups menu to see if it is set to the directory at which you want to start the search for the desired backups.
   a. To change the path, select the P (Change Path...) option.
   b. Type the new file path.
   c. Press Enter to return to the Restore Backups menu.
7. Select the files and directories you want to restore.
   a. Select the S (Select Files and Directories...) option from the Restore Backups menu to search for files and directories that belong to the source client and meet the path and date criteria.
   b. Use the menu options at the bottom of this screen to move the display arrow to the files or directories you want to restore to the destination client.
   c. Select the (S)elect option to select the file or directory. An asterisk (*) will appear to the left of the selected file or directory.

      If you select a directory, all directories and files below the selected directory will be implicitly selected.
   d. Select the (O)k option to return to the Restore Backups menu.

8. Preview the files and directories you have selected to restore.

   a. Select the E (Edit / View Selected Files...) option from the Restore Backups menu. The resulting screen lists your selections and lets you make changes.

   b. Review your selections.

   c. Select the (O)k option to return to the Restore Backups menu.

Note: NetBackup does not support alternate path restores on DomainOS systems (for example, Apollos).

---

9. Type I (Initiate Restore) option to start the restore operation.

10. Follow the prompts. The restore operation begins when you press Enter.

Resolving Links

When searching for files to restore, you can choose whether to have NetBackup resolve links that may exist in the search path. If you resolve links, NetBackup automatically changes the path so it points to the actual file or directory. Otherwise, NetBackup uses the path you type in.

In bp, if links exist in the selected path, you get a prompt at the time you elect to browse the backups.

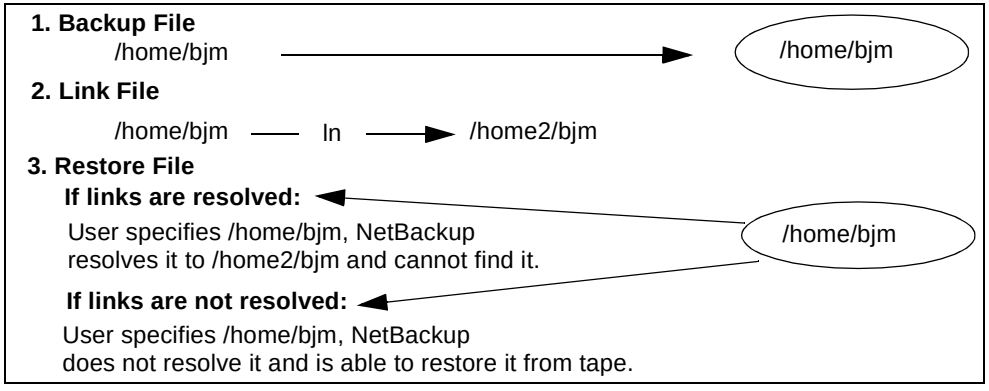
Note: NetBackup does not resolve links if you use wildcard characters in the search directory path.

It is usually best to resolve links. There are exceptions such as the following:

- If you backed up a file that was not a link and, since then, the file path was linked to a different directory.

  For example, assume you backed up `/home/bjm` and this directory is now a link to `/home2/bjm` . If you resolve links during the restore, NetBackup will not find the file because it searches for `/home2/bjm` and `/home/bjm` was the path you backed up.

- If you are restoring a file to your machine that was backed up by another client. There will be a problem if the path on the other client exists as a link on your machine.



Checking Progress of Operations

When you start a NetBackup operation, you can have NetBackup create a log file in a directory of your choice and write to this file during the course of the operation. By default, NetBackup creates a log file in your home directory of the form:

`bplog.bkup.`*n* (for backups)

`bplog.arch.`*n* (for archives)

`bplog.rest.`*n* (for restores)

Where *n* is a number that is unique for each file.

You can read log files by using the `more` command or a UNIX file editor. Delete the logs when you no longer need them. Since the log files can warn you of problems, it is usually best to read the log files before deleting them.

See “Interpreting Progress Logs” on page 43 for information on interpreting the logs.

CAUTION! When you perform a restore operation on a DomainOS system and specify to *NOT* overwrite existing files, NetBackup does not log anything for the files that already exist. For example, assume file A exists and you restore it without overwriting existing files, the following appears in the progress log:

```
Starting restore:
Restore complete:
```

The log does not show file A because it already exists.

Using the Java Interface

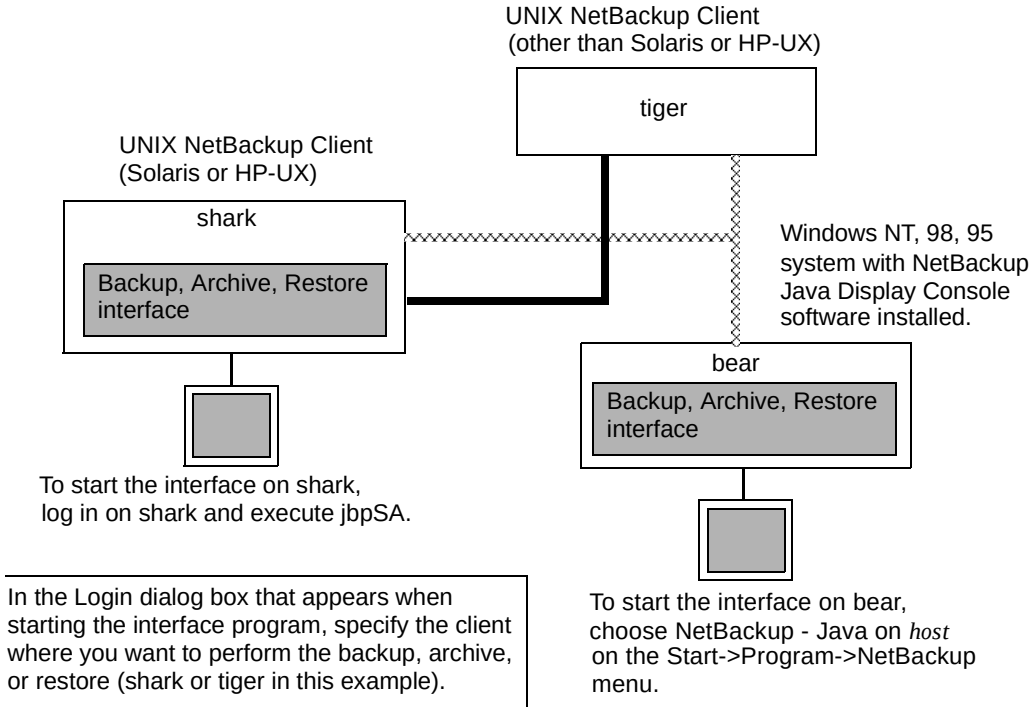
This chapter briefly discusses getting started with the Java User Interface. Refer to the online help for detailed usage information.

The NetBackup Java user interface (`jbpSA`) provides a graphical-user-interface through which users can perform backups, archives, and restores. The interface can be started and run on the following systems (see Figure 1):

- Supported Solaris or HP-UX systems.
- Windows NT, 98, or 95 systems that have the NetBackup Java Windows Display Console installed. The display console makes it possible to use the Java interface when a Solaris or HP-UX system is not available.

After starting the interface, the user specifies the client where they want to perform the backup, archive, or restore (the user must be an authorized user on that system).

Figure 1 NetBackup Java User Interface



The procedures for starting the interface are explained below. For operating instructions see the online help. Also, see *NetBackup Release Notes - UNIX*.

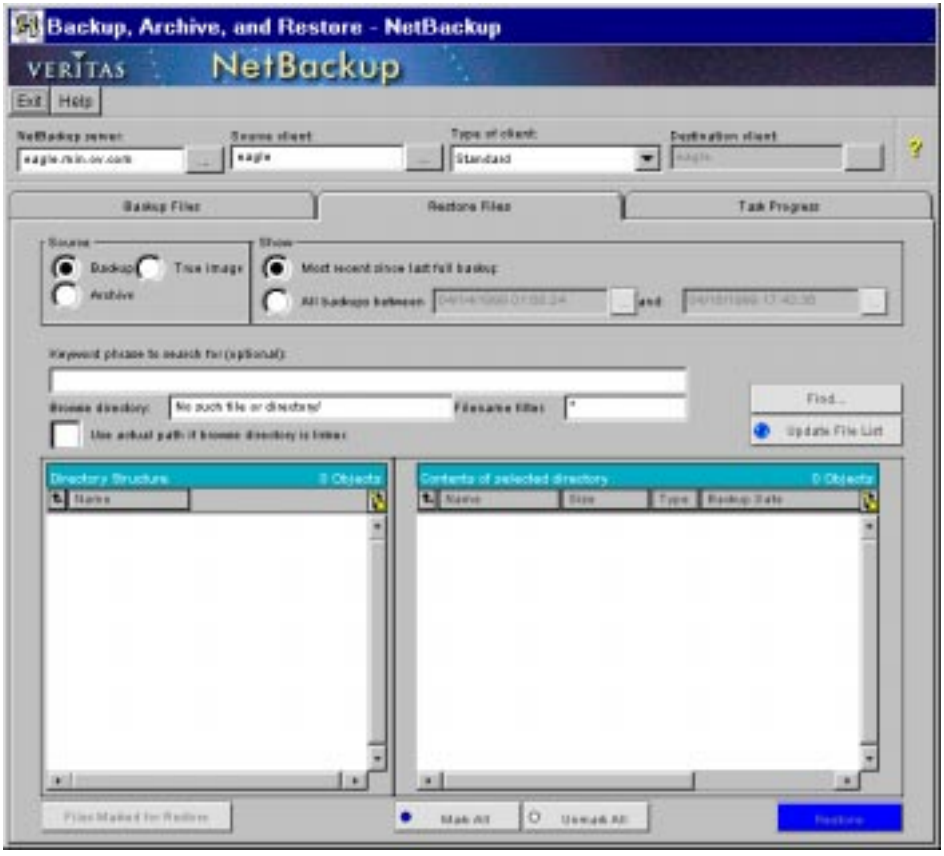
To Start the Interface on UNIX

1. Log in on the UNIX NetBackup client where you are going to start the Backup, Archive, and Restore interface.
2. Start the Backup, Archive, and Restore interface by executing:

   ```
   /usr/openv/netbackup/bin/jbpSA &
   ```

   The Login dialog box appears.
3. Type the name of the client where you want to perform the backup, archive, or restore and click OK. If you specify a client other than the one where you executed the `jbpSA` command, you also must specify a user name and password.

The Backup, Archive, and Restore - NetBackup window appears. See the online help for instructions on using this window.



To Start the Interface on a Windows Display Console

1. Click Programs on the Start menu.
2. On the Programs menu, point to NetBackup and then click NetBackup - Java on *host* on the submenu.

The Login dialog box appears and displays *host* as the NetBackup server. *host* is the default NetBackup client where you perform user operations (for example, shark on Figure 1). To perform user operations on another client, type its name in the box. When the client name is correct, type your user name and password and click OK.

When login is complete, the NetBackup Administration - Java window appears.

3. Click the Backup, Archive, and Restore icon (the other icons require root permission).

   The Backup, Archive, and Restore - NetBackup window appears. See the online help for instructions on using this window.

Reference Guide to the Interfaces

This chapter describes the various windows, screens, and menus associated with the xbp and bp user interface programs. Much of the information in this chapter is also available in the online help for the interfaces. Refer to Chapter 2, “Using the Graphical Interface” or Chapter 3, “Using the Menu Interface” for instructions on using the interfaces. For information on the Web Browser Java interface, refer to “Using the Java Interface” on page 77 or the online help for that application. To open the Java interface, execute the following command:

```
/usr/openv/netbackup/bin/jbpSA
```

Graphical User Interface (xbp)

The xbp program provides a graphical interface for NetBackup users. This interface is X Windows based and uses the OSF/Motif conventions. A general description of Motif usage is available in the *OSF/Motif User's Guide*, authored by the Open Software Foundation and published by Prentice Hall (ISBN 0-13-640509-6). The following topics describe the windows, screens, and menus that you use to perform operations with xbp.

Special Symbols in Menus and Dialog Boxes

You will encounter the following symbols as you use the menus and dialog boxes:

- An ellipsis (...) to the right of a menu item means that when you select the item, a dialog box with additional choices appears. If there is no ellipsis in a menu item, the operation occurs as soon as you select it.
- A diamond shape to the left of a menu item means that two or more mutually exclusive modes exist and the mode set by this menu item is currently in effect. For example, if you intend to restore an archived file, you want the diamond to the left of Browse Archives (Restore).
- An underlined letter in a menu label means a keyboard shortcut. For example, on an NCD terminal, pressing ALT in conjunction with a shortcut key opens the associated menu. For example, pressing ALT-v opens the View menu. Note that some terminals may require a key other than ALT.
- Once a menu is opened, a letter (by itself) is sufficient to execute a menu item tagged with that letter (pressing i on the View menu changes the Directory Structure pane format to indented. You can use the up and down arrow keys to move the highlight through the various menu items and press Enter to execute the highlighted item. The Escape key closes a menu. The left and right arrow keys open adjacent menus.
- If the pointer is over the main window, its shape changes to a wristwatch shape while NetBackup is waiting for an operation to complete. For example, the pointer changes to a wristwatch shape when NetBackup is updating its displays and then changes back to an arrow when the update is complete.

xbp Configuration

Borders on windows may vary depending on the window manager used at your site (popular examples are twm and mwm). With some window managers, you may have to click the left mouse button to position the window if it does not appear in a few seconds. You can also use your window manager to resize the window.

The xbp program has enough space in its text fields to accommodate user-selected fonts up to the 10x20 size. The windows can also fit on a 1024x768 screen with some room for window manager borders.

There is no default font. If the XNB resource file is in the X search path, xbp uses the values set in XNB. On some systems, the default font might be unpleasantly small. On other systems, the default font has proportional spacing, causing column misalignment on certain fields that have columnar text.

For an explanation of how to specify X resources to force a particular font, look near the end of the Tutorial help files. For example

1. From the Help menu, click Tutorial. The Online Help Text for xbp dialog box will appear.
2. Scroll to the Customizing xbp section.

If your X server defaults to proportional fonts and you do not know which fonts are available for your system, try the generic font name *fixed*.

Because the default window sizes are small enough to fit on a 1024x768 screen, you may find that with larger fonts, the *verbose* display mode forces you to use a horizontal scrollbar to see all the information. Widening the window at runtime with the window manager may eliminate the scrollbar. You can also change X resources as described in the Customizing xbp section of the Tutorial help file to enlarge the default geometry and use a smaller font.

The xbp program depends upon the /usr/lib/X11/XKeysymDB file to correctly use editing keystrokes such as backspace and delete. The NetBackup installation procedures are designed to install a nominal version of this file if it does not already exist. An existing version of the file is not overwritten, thereby ensuring that user-customized versions of XKeysymDB are not destroyed.

Sun systems typically have a version of `XKeysymDB` that does not define some editing keys. Either you or the administrator must compare your current `XKeysymDB` file to the NetBackup standard version `/usr/openv/netbackup/bin/XKeysymDB` on NetBackup server machines. Then:

- Append the NetBackup version onto the existing one.

  or

- Replace the existing one with the NetBackup version.

  or

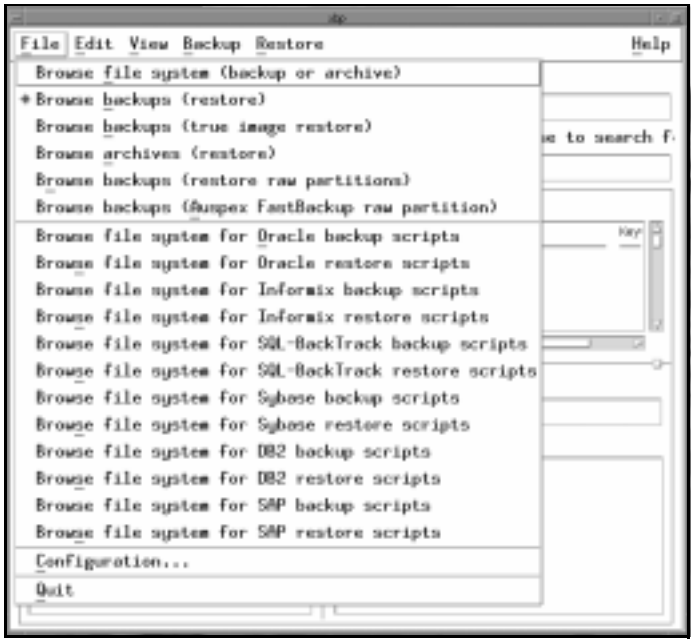
- Hand edit the existing version to achieve your preferred keyboard support.

xbp_main Window

The xbp_main window opens when you start the graphical interface program.

You can pull menus from the menu bar to start backup, archive, and restore operations. The text boxes let you enter specific values for finding and selecting directories and files. The lists show information about selected directories and files.

File Menu

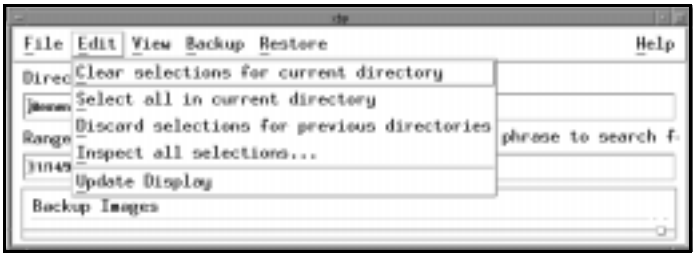


The File menu has commands for inding and selecting files for NetBackup operations. You can also browse for and select database scripts.

Browse File System (Backup or Archive)	Causes NetBackup to update its Directory Structure pane and the Files pane with directories and files that meet the criteria entered in the Directory To Search box, the Range of Dates boxes, the Filename Filter box, and the Keyword Phrase to Associate with This Backup box.
Browse Backups (Restore)	Causes NetBackup to build a list of the backups that exist for this client. The completed list appears in a Backup Images pane that opens in the main window.
Browse Backups (True Image Restore)	Causes NetBackup to build a list of the true-image backups that exist for this client. The completed list appears in a Backup Images pane that opens in the main window.
Browse Archives (Restore)	Causes NetBackup to build a list of the archives that exist for this client. The completed list appears in a Backup Images pane that opens in the main window.

Browse Backups (Restore Raw Partitions)	Causes NetBackup to build a list of the raw partition backups that exist for this client. The completed list appears in a Backup Images pane that opens in the main window.
Browse Backups (Auspex FastBackup Raw Partition)	Causes NetBackup to build a list of the Auspex FastBackup raw partition backups that exist for this client. The completed list appears in a Backup Images pane that opens in the main window.
Browse File System for (database extension)	NetBackup offers database extensions that you can use, in conjunction with `xbp`, to back up and restore many of the most popular databases. These NetBackup for database extensions are separately priced products which must be installed, then configured to work with `xbp`. See the NetBackup for database extension system administrator guides for details. The Browse File System commands enable the NetBackup for database extension. They cause NetBackup to update its Directory Structure pane and the Files pane to show all directories and files that meet the criteria of the Directory To Search box, the Range of Dates boxes, Filename Filter box, and the Keyword Phrase to Associate with This Backup box.
Configuration	Opens the xbp_config dialog box from which you can specify the master server, the client to browse for restores, the client to restore to, and the class type of images to browse. For more information, see “xbp_config Dialog Box” on page 108.
Quit	Terminates the graphical interface program.

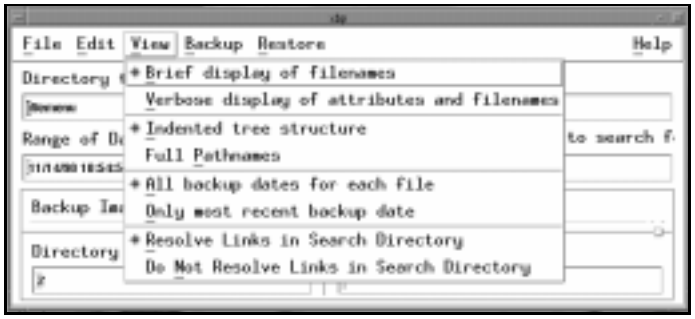
Edit Menu



The Edit menu has commands to modify your selections.

Clear Selections for Current Directory	Clears file selections from the Files pane. You must use Discard Selections for Previous Directories to clear the xbp_confirm dialog box.
Select All in Current Directory	Selects all the files in the Files pane.
Discard Selections for Previous Directories	Clears file selections from the xbp_confirm dialog box.
Inspect All Selections	Opens the xbp_viewselect dialog box, which shows you the files that are currently selected. This dialog box has only information and no commands except to close the dialog box or to obtain help.
Update Display	Rereads your directory tree and updates the Directory Structure pane and the Files pane. This is equivalent to pressing Enter in any of the text boxes.

View Menu

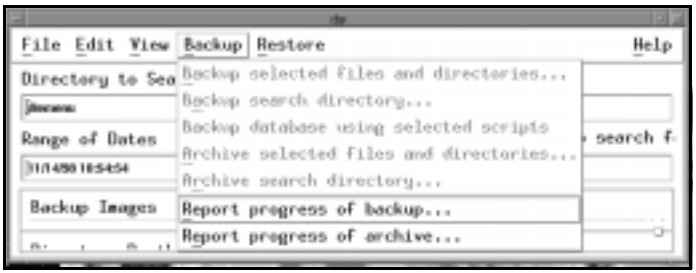


The View menu has commands that modify how NetBackup shows directory and file information in the Directory Structure pane and the Files pane.

Brief Display Of Filenames	Shows filenames without details. The display starts in brief mode.
Verbose Display Of Attributes and Filenames	Shows file details such as size and file permissions.
Indented Tree Structure	Indents items in the Directory Structure pane to show the hierarchy of the directory tree. You can use either Indented Tree Structure or Full Pathnames mode, but not both. The default is indented mode.
Full Pathnames	Shows full pathnames in the Directory Structure pane. You can use either Full Pathnames or Indented Tree Structure mode (see above), but not both. The graphical interface starts in the indented mode.
All Backup Dates For Each File	Shows all backups for each file in the Files pane. You can execute this command only when the File menu is set to one of the browse backups mode or archives modes (diamond shape to the left of those entries). The choice is unavailable when you browse the file system. The All Backup Dates For Each File and Only Most Recent Backup Date choices are mutually exclusive. You can use either but not both. The graphical interface starts in the All Backup Dates For Each File mode.

Only Most Recent Backup Date	Shows only the most recent backup of a file in the Files pane. This command is useful if you lose a directory and want to get the most recent copy of all files (which may be spread across many backups). You can execute this command only when the File menu is set to one of the browse backups mode or archives modes (diamond shape to the left of those entries). The choice is unavailable when you are browsing the file system. The All Backup Dates For Each File (see above) and Only Most Recent Backup Date choices are mutually exclusive. You can use either but not both. The graphical interface starts in the All Backup Dates For Each File mode.
Resolve Links In Search Directory	If you click this command, NetBackup automatically changes any links in your search path so the path points to the actual file or directory. This is the default.
Do Not Resolve Links in Search Directory	If you click this command, NetBackup searches for the path as you type it in, without resolving links.

Backup Menu



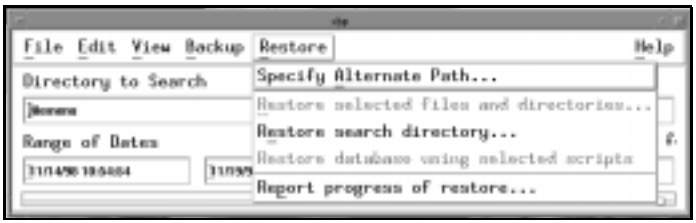
The Backup menu has commands to start a backup or archive of selected files and directories. You can also obtain a progress report on backups or archives. The File menu must be set to a browse file system mode (diamond shape to the left of the command) before you can execute any Backup menu commands, other than the report on progress. If the graphical interface is in a restore mode, when you pull down the Backup menu, the backup commands are unavailable.

Note: If you click Backup Selected Files and Directories or Archive Selected Files and Directories but then close the xbp_confirm dialog box without confirming your selections, you are returned to the main window. Your file selections, however, remain in the xbp_confirm dialog box. This feature is useful if you want to return to the main window to edit your selections. To clear previous file selections, click Discard Selections for Previous Directories on the Edit menu.

Backup Selected Files and Directories	Starts a backup of the current selections from the Files pane by opening the xbp_confirm dialog box. This dialog box shows the current selections. Click OK to execute the backup. Click Cancel to abort and return to the main window.
Backup Search Directory	Starts a backup of the current selection from the Directory Structure pane by opening the xbp_confirm dialog box. This dialog box shows the current selection. Click OK to execute the backup. Click Cancel to abort and return to the main window.

Backup Database Using Selected Scripts	NetBackup offers database extensions that you can use, in conjunction with xbp, to back up and restore many of the most popular databases. These NetBackup for database extensions are separately priced products which must be installed, then configured to work with xbp. See the NetBackup for database extension system administrator guides for details This command starts a backup of a database by opening the xbp_confirm dialog box. This dialog box shows the scripts you selected from the Files pane. Click OK to execute the backup. Click Cancel to abort and return to the main window.
Archive Selected Files and Directories	Starts an archive of the current selections from the Files pane by opening the xbp_confirm dialog box. This dialog box shows the current selections. Click OK to execute the archive. Click Cancel to abort and return to the main window.
Archive Search Directory	Starts an archive of the current selection from the Directory Structure pane by opening the xbp_confirm dialog box. This dialog box shows the current selection. Click OK to execute the archive. Click Cancel to abort and return to the main window.
Report Progress Of Backup...	Opens the xbp_progress dialog box, which shows the log files pertaining to your backup operations. See “xbp_progress Dialog box” on page 114 for more information.
Report Progress Of Archive	Opens the xbp_progress dialog box, which shows the log files pertaining to your archive operations. See “xbp_progress Dialog box” on page 114 for more information.

Restore Menu



The Restore menu has commands to start a restore of selected files and directories. You can also obtain a progress report on restores. The File menu must be set to a browse for restore mode (diamond shape to the left of the command) before you can execute any Restore menu commands, other than the report on progress. Otherwise, when you pull down the Restore menu, those choices are unavailable.

Note: If you click Restore Selected Files and Directories but then close the xbp_confirm dialog box without confirming your selections, you are returned to the main window. Your file selections remain in the xbp_confirm dialog box. This feature is useful if you want to return to the main window to edit your selections. To clear those previous file selections, click Discard Selections for Previous Directories on the Edit menu.

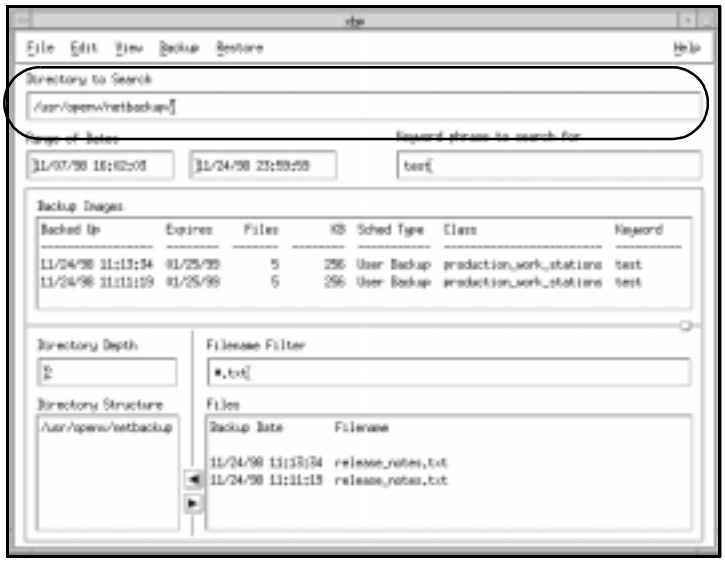
Specify Alternate Path	Opens the xbp_altpath dialog box. This dialog box lets you restore files to a directory other than the one from which they were backed up. If you specify a path that does not exist, NetBackup creates it when restoring the file. (Note that DomainOS clients do not support alternate path restores.) Refer to “xbp_altpath Dialog Box” on page 110 for more details.
Restore Selected Files and Directories	In all browse modes except true-image restore, this command starts a restore of current selections in the Files pane. In true-image restore mode, this command starts a true-image restore of the selected directory. In both cases the xbp_confirm dialog box opens to show the current selections. Click OK to execute the restore. Click Cancel to abort and return to the main window.
Restore Search Directory	Not available in Browse backups (true image restore) mode, this command starts a restore of the current selection in the Directory Structure pane by opening the xbp_confirm dialog box. This dialog box shows the current selections. Click OK to execute the restore. Click Cancel to abort and return to the main window.

Restore Database Using Selected Scripts	NetBackup offers database extensions that you can use, in conjunction with xbp, to back up and restore many of the most popular databases. These NetBackup for database extensions are separately priced products which must be installed, then configured to work with xbp. See the NetBackup for database extension system administrator guides for details These commands start a restore of their respective type of database by opening the xbp_confirm dialog box. This dialog box shows the scripts you selected from the Files pane. Click OK to execute the restore. Click Cancel to abort and return to the main window.
Report Progress Of Restore...	Opens the xbp_progress dialog box, which shows the log files pertaining to your restore operations. See “xbp_progress Dialog box” on page 114 for more information.

Help Menu

The Help Menu has online instructions for using the graphical interface.

Directory To Search Box



The directory to search is the starting point in a browse for files to back up, archive, or restore. The default is the directory you used to start the graphical interface. You can change the directory to search by typing a new directory path in the Directory To Search box and pressing Enter, or by double clicking on a directory in the Directory Structure pane.

When specifying the directory to search, you can also use the following wildcard characters

* ? []

For example:

```
/home/s*
/home/.??*
/home/[a-z]*
```

If you are backing up or restoring a file path that has a wildcard character used literally (that is, as a non-wildcard character), you must *escape* the wildcard using a backslash (\) character. For example, the following path uses brackets that are not being used as wildcards:

```
/home/abc/fun[ny]name
```

To back up or restore this file path, you must precede the brackets with backslashes as in

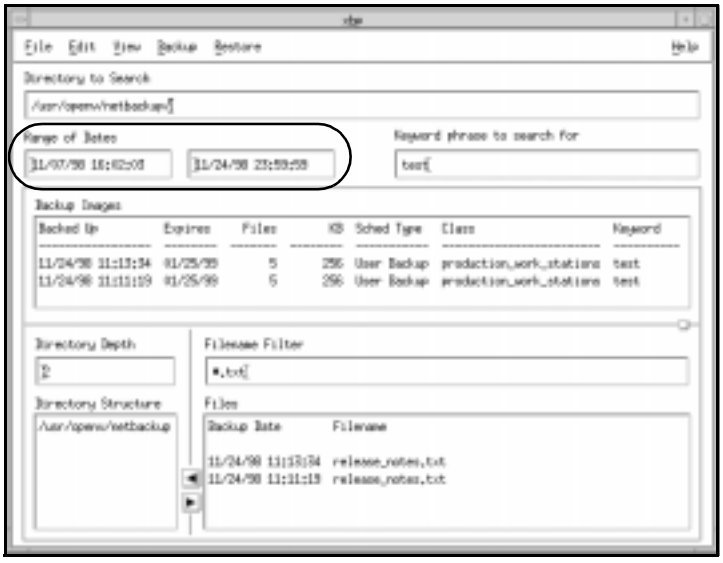
```
/home/abc/fun\[ny\]name
```

so NetBackup interprets the brackets literally.

The backslash acts as an escape character only when it precedes a wildcard as in the above example. This means that NetBackup normally interprets it literally and it is a legal character to use in pathnames.

The Directory To Search box automatically scrolls horizontally to allow entry of long pathnames. To view paths that do not fit in the window, a scroll bar allows you to scroll horizontally.

Range of Dates Boxes



The Range of Dates boxes allow you to specify a date range for browsing and selecting files. The left box is start date and the right box is end date.

- For a restore, you type a range of dates that includes the times when you suspect the desired backups or archives occurred.
- For a backup or archive, you type the range of dates that includes the times when the desired files were last modified.

The Directory Structure pane and the Files pane will show only files that meet the date range criteria. The administrator can change the initial browse default to show a smaller range of dates by using the INITIAL_BROWSE_SEARCH_LIMIT option in the server and client `/usr/openv/netbackup/bp.conf` files.

Browse Mode

When you start the graphical interface, it is in backup mode and the default date range is from 01/01/70 to the current date. You can change this range by typing new values with the keyboard and pressing Enter. In the United States, the format for:

- dates is month/day/year.

  For example, 01/23/93.

- time is hours:minutes:seconds.

  Hours is expressed in terms of the 24 hour clock. For example, 12 am is 00:00:00, 12 pm is 12:00:00, and 11:30 pm is 23:30:00.

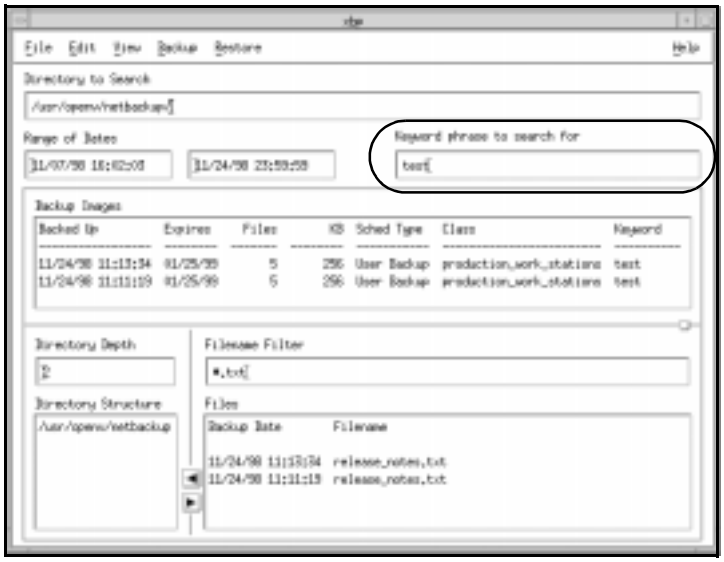
Leave the end date blank to search from the start date to the current date.

Restore Mode

When you switch from backup mode to restore mode, NetBackup normally changes the starting date so that it defaults to the most recent full backup. However, if you type a specific date just before changing modes, your specification is used.

If the client belongs to more than one class, the starting date defaults to the last full backup that occurred first. For example, assume that the client belongs to ClassW1 and ClassW2 and full backups occur for both of them. If the last full backup for ClassW1 occurred before the one for ClassW2, then the display shows files ranging from the time of the ClassW1 full backup.

Keyword Phrase to Associate with This Backup Box



Specifies a keyword phrase that NetBackup will associate with the backup being created by a backup or archive operation. You can then restore the backup by specifying the keyword phrase.

You can use this option in place of or in combination with the other restore options in order to make it easier to restore your backups and archives. The following meta characters can be used to simplify the task of matching keywords or parts of keywords in the phrase:

* - matches any string of characters.

? - matches any single character.

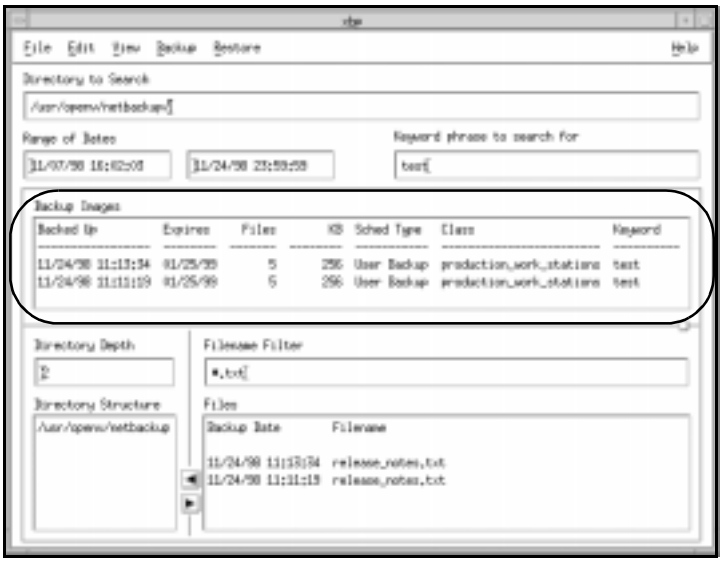
[ ] - matches one of the sequence of characters specified within the brackets.

[-] - matches one of the range of characters separated by the “-”.

The keyword phrase is a textual description of the backup that is a maximum of 128 characters in length. All printable characters are permitted including space (“ “) and period (“.”). You must enclose the phrase in double quotes (“...”) or single quotes (‘...’) to avoid conflict with the UNIX shell.

The default keyword phrase is the null (empty) string.

Backup Images Pane



The Backup Images pane opens within the main window when you execute Browse Backups (Restore), Browse Backups (True Image Restore), or Browse Archives (Restore) from the File menu. This pane shows the backups or archives for your client. You can search either all or some of the backups to find directories and files that meet the values in the Directory To Search box, the Range of Dates boxes, the Directory Depth box, Filename Filter box, and the Keyword Phrase to Associate with This Backup box.

The list starts with the most recent backup or archive. The list contains the following information on each backup:

Backed Up	Date and time at which the backup occurred.
Expires	Date and time at which NetBackup expires the backup and removes it from the Backup Images pane.
Files	Number of files in the backup.
KB	Size of the backup in kilobytes.

Sched Type	Shows the type of schedule as follows: - Full Backup - Incr Backup - User Backup - User Archive
Class	Backup class that created the backup. The system administrator configures the class names, as explained in the *NetBackup System Administrator's Guide - Windows NT Server* or *NetBackup System Administrator's Guide - UNIX*.
Keyword	Shows the keyword typed by the user when the backup was initiated.

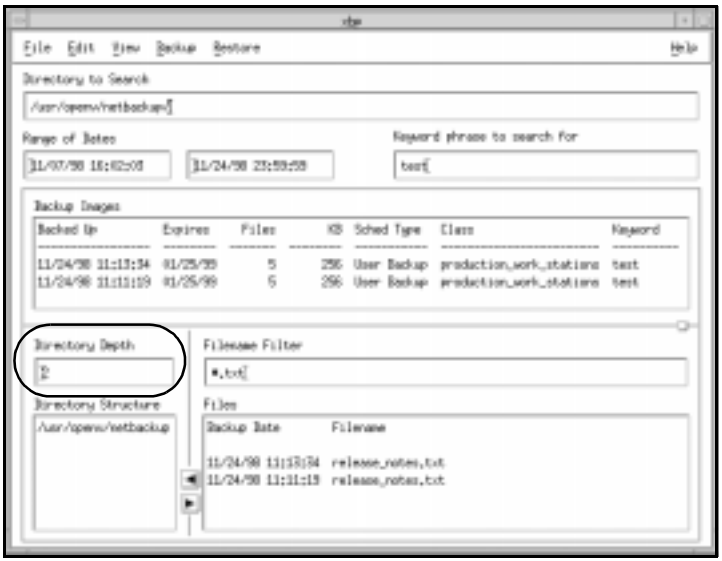
The rules for selecting backups from the Backup Images pane are:

- Selecting a specific backup changes both dates to show the backed up time for the selected backup.
- Selecting a range of consecutive backups changes the date boxes to show the oldest and newest times in the selected range.
- Selecting another backup cancels previous selections. If the list is longer than the window, a vertical scroll bar appears along the right edge.

When you are satisfied with your selections, move the pointer over one of the text boxes and press Enter. This updates the Directory Structure pane and the Files pane to show the directories and files that are in the selected backups and meet your Directory To Search criteria, the Range of Dates criteria, the Directory Depth criteria, Filename Filter criteria, and the Keyword Phrase to Associate with This Backup criteria.

Note: There may be a noticeable delay before the update occurs because the client must obtain this information from the NetBackup master server.

Directory Depth Box



The Directory Depth box determines how deep to search the subdirectories of the current directory. It has no effect on the Files pane. Increment or decrement the depth by typing a new value with the keyboard and pressing Enter. The default is 2.

Filename Filter Box

The Filename Filter box determines the files, of a selected directory, that NetBackup shows in the Files pane. When you start the graphical interface, the Filename Filter box has a value of * and the Files pane shows all files. You can change the filter to limit the files that NetBackup shows. In addition to specific file names, you can use the following types of expressions to filter filenames:

Asterisk (*) matches one or more characters. For example, a search for *_log matches all files that end with _log.

Question mark (?) matches a single character. For example, a search for log? matches the log1, log2, and log3 files.

Brackets ([]) specify any of the listed characters. For example, a search for prog[1-4] finds all five-character files that start with prog and end with a digit in the range 1 through 4.

Directory Structure Pane and the Files Pane

These panes show the directories and files that you can select for NetBackup operations. Directories in the Files pane are followed by a slash. The contents of these panes depends on the browse mode.

For more information on browsing directory trees and selecting files, see “Finding and Selecting Files and Directories” on page 45.

Browse File System (Backup or Archive) Mode

If you are in Browse File System (Backup or Archive) mode, the panes show the directories and files in the filesystem that:

- Are in the Directory To Search box or in subdirectories below it in the client's directory tree (the Directory Depth box determines number of levels shown).
- Have modified dates within the time frame specified in the Range of Dates boxes.
- Are in the currently selected directory which match the value in the Filename Filter box.

When you start the graphical interface, it is in the Browse File System (Backup or Archive) mode and shows all directories and files that reside under the directory from which you executed the xbp command.

Browse Backups (Restore) or Browse Archives (Restore) Mode

If you are in Browse Backups (Restore) or Browse Archives (Restore) mode, the panes show the directories and files that are in the selected backups or archives and meet the following criteria:

- Are in the Directory To Search box or in subdirectories below it in the client's directory tree (the Directory Depth box determines number of levels shown).
- Were backed up within the time frame specified by the Range of Dates boxes.
- Are in the currently selected directory which match the value in the Filename Filter box.

Browse Backups (True Image Restore) Mode

If you are in Browse Backups (True Image Restore) mode, the panes show the directories that are in the selected backups and meet the following criteria:

- Are in the Directory To Search box or in subdirectories below it in the client's directory tree (the Directory Depth box determines number of levels shown).
- Were backed up by a scheduled full or incremental backup within the time frame specified by the Range of Dates boxes.
- Are in the currently selected directory which match the value in the Filename Filter box.

Browse for Scripts Modes

When in the browse for scripts modes, the panes show the same type of information as when you browse the file system for backups or archives.

NetBackup offers database extensions that you can use, in conjunction with xbp, to back up and restore many of the most popular databases. These NetBackup for database extensions are separately priced products which must be installed, then configured to work with xbp. See the NetBackup for database extension system administrator guides for details

Browse Backups (Restore Raw Partitions) Mode

When in the browse backups (Restore Raw Partitions) mode, the panes show the same type of information as when you browse the file system for backups or archives.

Browse Backups (Auspex FastBackup Raw Partition) Mode

When in the browse backups (Auspex FastBackup Raw Partitions) mode, the panes show the same type of information as when you browse the file system for backups or archives.

xbp_config Dialog Box

The xbp_config dialog box opens when you click Configuration on the File menu.

The xbp_config dialog box lets users change the following values. Use the mouse and keyboard to make the desired changes. After completing your changes:

- Click OK to use the new values.

  or

- Click Cancel to cancel the changes so the previous values are still used.

Server box	This is the current master server to which NetBackup sends backup and archive requests and also the server that has the backup you can browse for files to restore to your client. The master server is the first one listed under the SERVER option in the `/usr/openv/netbackup/bp.conf` file on the client. See the *NetBackup System Administrator's Guide - Windows NT Server* or *NetBackup System Administrator's Guide - UNIX* for more information on the `bp.conf` file. When you start the graphical interface, this box shows the default master server configured for your client. You can change the name of the master server. If you specify an invalid name or your client does not belong to a configured class on that server, you get an error message.
Client To Browse For Restores box	Client whose backed up files you can currently browse. The administrator on the master server can change this name to that of another client and can grant you permission to do the same by making the necessary changes to the `/usr/openv/netbackup/altnames` file on the master server. When you start the graphical interface, this box shows the name of the client on which you are running as specified by the CLIENT_NAME parameter in the `/usr/openv/netbackup/bp.conf` file on the client. See the *NetBackup System Administrator's Guide - Windows NT Server* or *NetBackup System Administrator's Guide - UNIX* for more information on the `altnames` file and the `bp.conf` file.
Client To Restore To	When you start the graphical interface, this field shows the name of the client on which you are running. The administrator running the user interface on the master server can change this name in order to direct files to another client. This ability is not available to other users.
Class type of image to browse	Type of client to which you are restoring files when you restore to an alternate client. The client type must match that in Client To Restore To box and the Client To Browse For Restores box. You cannot restore clients from one type to another.

xbp_altpath Dialog Box

The xbp_altpath dialog box opens when you click Specify Alternate Path on the Restore menu. This dialog box lets you set up a restore to a path other than the one from which files were originally backed up.

The text boxes at the top of the dialog box show the restore paths:

Restore From
: Shows a full or partial pathname that NetBackup uses to find the files to restore.

Restore To
: Shows the path to which NetBackup restores the selected files.

When you start the graphical interface, these paths are set to your current directory to search.

Use the mouse and keyboard to change the paths in the Restore From box and the Restore To box. You can use the Current Directory button to change the values in both boxes to their default, which is your current directory to search. If you specify a path that does not currently exist, NetBackup creates it when restoring the file.

After completing your changes to the paths:

- Click OK to use the Restore From and Restore To paths on the next restore.

  or

- Click Cancel to cancel the changes so the previous paths are still used.

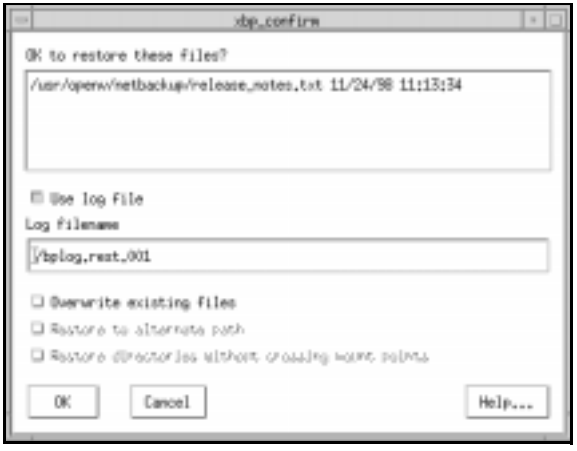
You can also rename soft (symbolic) and hard links to the files so those links show the Restore To pathname:

Rename Hard Link — Enable the button to rename hard links so they point to the new path. The button is enabled when highlighted.

Rename Soft Links — Enable the button to rename soft (symbolic) links so they point to the new path. The button is enabled when highlighted.

xbp_confirm Dialog Box

The xbp_confirm dialog box opens when you execute a NetBackup operation. This dialog box shows the items you picked in the Directory Structure pane or Files pane and lets you confirm them before continuing. If the list of selections is longer than the dialog box, a vertical scroll bar appears along the right edge.



Use Log File

The Use Log File checkbox lets you select whether you want NetBackup to create a progress log file in your home directory and write to this file as the operation progresses.

Enable the Use Log File checkbox to use the log file (this is the default). The name of the log file appears in the Log Filename box. Use report progress commands from the Backup menu or the Restore menu to read these files (see the next topic, “xbp_progress Dialog box” on page 114).

Overwrite Existing Files

If you are restoring files or directories, the Overwrite Existing Files checkbox lets you choose whether you want to overwrite existing files.

Select the Overwrite Existing Files checkbox to overwrite. See “File Permissions Required By NetBackup” on page 7 for an explanation of how file ownership and permissions affect overwriting of files and directories.

Clear the Overwrite Existing Files checkbox if you do not want to overwrite existing files. The restore will not occur if the file exists.

Restore To Alternate Path	If you previously selected an alternate path, the Restore To Alternate Path checkbox is active and lets you restore files into a directory other than the one from which they were backed up (see “xbp_altpath Dialog Box” on page 110). If you did not previously select an alternate path, the checkbox is unavailable. Select the Restore To Alternate Path checkbox to restore the files to the alternate directory. Clear the Restore To Alternate Path checkbox to cancel the alternate path restore.
Restore Directories Without Crossing Mount Points	To skip over file systems mounted in the selected directories, select the Restore Directories Without Crossing Mount Points checkbox (this is the default).

Note: Mount points inside will get restored whether or not the Restore directories without crossing mount points box is selected.

When you are satisfied with your selections, click OK to start the NetBackup operation.

To cancel and return to the main window without performing a NetBackup operation, click Cancel. The cancel does not affect your selections. After cancelling, you can either edit your selections or clear them by clicking Discard Selections for Previous Directories on the Edit menu.

xbp_progress Dialog box

The xbp_progress dialog box opens when you execute a Report Progress Of Backup..., Report Progress Of Archive, or Report Progress Of Restore... from the appropriate menu. This dialog box shows the related progress log files in your home directory and lets you view them in order to monitor the progress of the operation.

See “Checking Progress of Operations” on page 42 for information on using this dialog box.

Menu Interface (bp)

The bp program is a menu driven user interface to NetBackup. When using the menus, you execute an operation by typing the letter to the left the related menu item. For example, typing B from the main menu takes you to the Backup menu (it is usually unnecessary to press Enter). An ellipsis (...) to the right of an option means that when you choose the option, another menu or screen appears from which you can make further choices. If there is no ellipsis, the operation occurs immediately.

Main Menu

Master Server	Master server to which NetBackup sends operation requests. Use the M (Change Master Server...) option from the Backup Menu or the Restore Menu to specify another master server.
Client	Displays the name of the client for which the backup or archive will be performed.
B (Backup...) option	Opens the Backup Menu.
R (Restore...) option	Opens the Restore Menu.
H (Help) option	Help information for the main menu. Each secondary menu also has this option.
Q (Quit) option	Terminates the program and returns to the shell prompt.

Backup Menu

Master Server	This is the master server to which NetBackup sends backup and restore requests. You can use the M (Change Master Server...) option to specify another master server.
Client	Displays the name for the client for which the backup or archive will be performed.
B (Backup Files and Directories...) option	Opens the Backup of Files and Directories menu.
A (Archive Files and Directories...) option	Opens the Archive of Files and Directories menu.
Backup database options	NetBackup offers database extensions that you can use, in conjunction with xbp, to back up and restore many of the most popular databases. These NetBackup for database extensions are separately priced products which must be installed, then configured to work with xbp. See the NetBackup for database extension system administrator guides for details.
O (Backup Oracle DB...) option	Opens the Backup Oracle DB menu.
I (Backup Informix DB...) option	Opens the Backup Informix DB menu.
S (Backup Sybase DB...) option	Opens the Backup Sybase DB menu.

P (Backup SAP DB...) option	Opens the Backup SAP DB menu.
2 (Backup DB2 DB...) option	Opens the Backup DB2 DB menu.
T (Backup SQL-BackTrack DB...) option	Opens the Backup SQL-BackTrack DB menu.
M (Change Master Server...) option	Lets you change the master server to which NetBackup sends backup and restore requests. If it is an invalid server or the client does not belong to a user-directed backup class on that server, you receive an error message. The master server is set to the configured default for your client each time you start the menu interface.
H (Help) option	Help information for the Backup Menu. Each secondary menu also has a H (Help) option.
Q (Quit Menu) option	Closes the Backup Menu and returns to the Main Menu.

Backup of Files and Directories Menu

Path	This is the starting point for searches that you start with the S (Select Files and Directories...) option. You can change the current directory with the P (Change Path...) option from the menu.
Start Date	The Start Date and End Date (below) show the range of dates that the search will include. Start Date is the earliest *modified* date and time that a file can have for NetBackup to be included in the search. You can change the Start Date with the D (Change Date Range...) option from the menu. When you start the menu interface, the Start Date is set to 01/01/70 00:00:00 for backups and archives.
End Date	The Start Date (above) and End Date show the range of dates that the search will include. End Date is the latest *modified* date and time that a file can have for NetBackup to be included in the search. You can change the End Date with the D (Change Date Range...) option from the menu. When you start the menu interface, the End Date is set to 23:59:59 of the current day.
Master Server	This is the master server to which NetBackup sends NetBackup operation requests. You can use the M (Change Master Server...) option to specify another master server.
Display Mode	Displays the display mode, verbose or brief. Refer to “X (Change Display Mode to Verbose) option” on page 119 for more details.
Files Selected	Number of files currently selected for backup. This number changes as you select or unselect files with the S (Select Files and Directories...) option or E (Edit/View Selected Files...) option.

K (Change Keyword Phrase) option	Displays the keyword phrase entered for the backup.
S (Select Files and Directories...) option	Displays the list of files and directories for the indicated path. Select files and/or directories from this list to back up.
E (Edit/View Selected Files...) option	Displays the list of files and directories previously selected for backup. You can also add or delete selections from the list. For more information, see "Edit/View Selections Screen" on page 138.
I (Initiate Backup) option	Starts the backup operation. Selection I brings up prompts for creating a log file in your home directory and writing to this file as the operation proceeds.
P (Change Path...) option	Lets you change the directory at which subsequent search operations begin.
D (Change Date Range...) option	Lets you change the Start Date and End Date as shown at the top of the menu. These dates specify the range in which a file's *modification date* must be in order to be included in the search for files to back up. Typing D brings up prompts for typing new start and end dates. Some basic rules for typing dates are as follows: The format for dates is month/day/year. For example, 01/23/93. The format for time is *hours*:*minutes*:*seconds* and in terms of the 24 hour clock. For example, 12 am is 00:00:00, 12 pm is 12:00:00, and 11:30 pm is 23:30:00. To leave a date unchanged, press Enter at the prompt. If you change only part of the date or time and press Enter, NetBackup completes the entry.
M (Change Master Server...) option	Lets you change the master server to which NetBackup sends backup and restore requests. If an invalid server is selected, or the client does not belong to a user-directed backup class on that server, you will receive an error message. The master server is set to the configured default for your client each time you start the menu interface.
K (Change Keyword Phrase) option	Lets you enter a keyword phrase for your backup.
X (Change Display Mode to Verbose) option	Selects whether the Search screen shows only names or also includes file details such as permissions. Toggle the Display Mode indication to *Verbose* for file details and to *Brief* to unselect them.

H (Help) option	Help information for the Backup of Files and Directories menu. Each secondary menu also has a Help option.
Q (Quit Menu) option	Closes the Backup of Files and Directories menu and returns to the Main Menu.

Archive of Files and Directories Menu

The Archive of Files and Directories menu has choices for archive operations. Archive and backup operations are the same except that an archive deletes the file after backing it up, thus freeing disk space.

The information at the top of the menu, as well as the menu choices, are the same as the Backup of Files and Directories menu. The one exception is the I (Initiate Archive option which starts the archive operation.

Database Backup Menus

The database backup menus have choices for their respective types of database backups. The following figure is an example of the Backup Oracle DB menu.

The information at the top of the menu, as well as the menu choices, are the same as the Backup of Files and Directories menu. The one exception is the I (Initiate Oracle DB Backup Using Selected Script(s)) option. Choosing this option uses the scripts you selected with the S (Select Scripts...) option and E (Edit / View Selected Scripts...) option to back up Oracle databases. The other Backup DB menus are the same, except for the menu choice that starts the backup.

Refer to the appropriate NetBackup database System Administrator's Guide.

Restore Menu

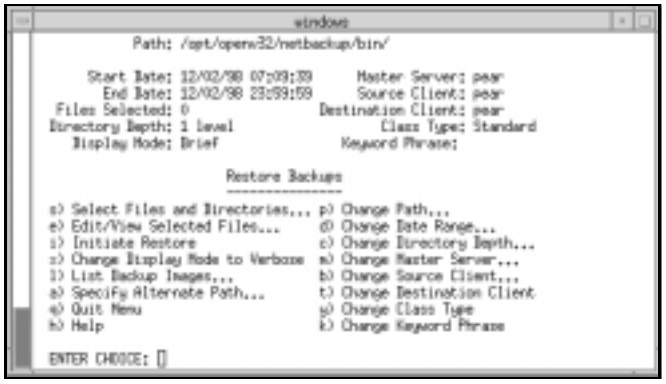
Master Server	This is the master server that has the backup for the files you are browsing. You can use the M (Change Master Server...) option to select another master server.
Client	Client that backed up the files you are permitted to browse and restore.
B (Restore Files and Directories from Backups...) option	Opens the Restore Backups menu.
A (Restore Files and Directories from Archives...) option	Opens the Restore Archives menu.
R (Restore From Raw Partition Backups...) option	Opens the Restore Raw Partition Backups menu.
F (Restore From Auspex FastBack Backups...) option	Opens the Restore Auspex FastBackup Raw Partition Backups menu.
D (Restore From True Image Backups...) option	Opens the Restore True Image Backups menu.

Restore database options	NetBackup offers database extensions that you can use, in conjunction with xbp, to back up and restore many of the most popular databases. These NetBackup for database extensions are separately priced products which must be installed, then configured to work with xbp. See the NetBackup for database extension system administrator guides for details
O (Restore From Oracle DB Backups...) option	Opens the Restore Oracle DB menu.
I (Restore From Informix DB Backups...) option	Opens the Restore Informix DB menu.
S (Restore From Sybase DB Backups...) option	Opens the Restore Sybase DB menu.
T (Restore From SQL-Backtrack DB Backups...) option	Opens the Restore DB using SQL-BackTrack menu.
P (Restore From SAP DB Backups...) option	Opens the Restore SAP DB menu.
2 (Restore From DB2 DB Backups...) option	Opens the Restore DB2 DB menu.
M (Change Master Server...) option	Lets you change the master server to which NetBackup sends backup and restore requests. If it is an invalid server or the client does not belong to a user-directed backup class on that server, you receive an error message. The master server is set to the configured default for your client each time you start the menu interface.

H (Help) option	Help information for the Restore Menu. Each secondary menu also has a H (Help) option.
Q (Quit Menu) option	Closes the Restore Menu and returns to the Main Menu.

Restore Backups Menu

If you log in as root, you will see the following.



If you log in as a user, you will see the following.

Path	This is the starting point for searches that you start with the S (Select Files and Directories...) option. You can change the current directory with the P (Change Path...) option from the menu.
Start Date	Start Date and End Date (below) show the range of backup dates NetBackup searches for files to restore. Start Date is the earliest backup date and time that NetBackup checks when searching backups. You can change this with the D (Change Date Range...) option from the menu.

End Date	The Start Date (above) and End Date show the range of backup dates that NetBackup searches for files to restore. Start Date is the latest backup date and time that NetBackup checks when searching backups. You can change this with the D (Change Date Range...) option from the menu.
File Selected	Number of files currently selected. This number changes as you select or unselect files with the S (Select Files and Directories...) option or E (Edit/View Selected Files...) option.
Directory Depth	This number indicates how many levels of directories and files NetBackup shows on the Search screen. You can increment or decrement the depth with the C (Change Directory Depth...) option. The default is 1.
Display Mode	Displays the display mode, verbose or brief. Refer to “X (Change Display Mode to Verbose) option” on page 119 for more details.
Master Server	Master server that has the backup for the files you are browsing. You can use the M (Change Master Server...) option to select another master server.
Source Client	Client that backed up the files you are permitted to browse and restore. You can use the B (Change Source Client...) option to select another client.
Destination Client	Client to which NetBackup will restore the selected files. This option will be displayed when you log in as root. Only the administrator on the master server can change this name to that of another client. See the T (Change Destination Client) option for information on changing this name.
Class Type	Your client type. This is Standard for all except those using the DomainOS operating system. DomainOS clients are Apollo_wbak. See the Y (Change Class Type) option for information on changing the class type.
K (Change Keyword Phrase) option	Displays the keyword phrase entered for the backup.
S (Select Files and Directories...) option	Takes you to the Search screen from which you can browse the backup. From this screen, you can select files and directories to restore.
E (Edit/View Selected Files...) option	Shows the list of files and directories previously selected for restore. You can also add or delete selections from the list.

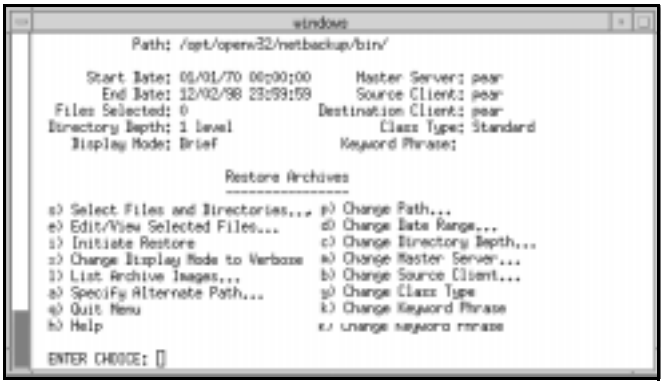
I (Initiate Restore) option	Brings up the Initiate Restore screen from which you can start the operation. Typing an I brings up prompts for specifying whether: • NetBackup creates a log file in your home directory and writes to this file as the operation proceeds. • to overwrite existing files that have the same names as those you are restoring. If you selected A (Specify Alternate Path...), you will be prompted to verify that you want to: • restore to an alternative path • rename hard links • rename soft links
X (Change Display Mode to Verbose) option	Selects whether the Search screen shows only names (*Brief* mode) or also includes file details such as permissions (*Verbose* mode). Toggle the Display Mode indication to *Verbose* to select file details and *Brief* to unselect them.
L (List Backup Images...) option	Lists the backups for the client that meet the Directory To Search, the Range of Dates, the Directory Depth box, Filename Filter, and the Keyword Phrase to Associate with This Backup criteria.
A (Specify Alternate Path...)	Lets you restore files to a directory other than the one from which they were backed up. If you specify a path that does not currently exist, NetBackup creates it when restoring the file. (DomainOS clients do not support alternate path restores.)
Q (Quit Menu) option	Closes the Restore Backups menu and returns to the Main Menu.
H (Help) option	Help information for the Restore Backups menu. Each secondary menu also has a H (Help) option.
P (Change Path...) option	Lets you change the directory at which subsequent search operations begin. To find a specific file, type its complete pathname at the prompt. You can also use wildcard characters *, ?, [, and] to find multiple files and directories.
D (Change Date Range...) option	Lets you change the Start Date and End Date at the top of the menu. These dates specify the range of backup dates that NetBackup searches during a restore. Typing D brings up prompts for typing new start and end dates.
C (Change Directory Depth...) option	Lets you change the number of levels of directories and files that appear on the Search screen. The new number appears in the Directory Depth field at the top of the screen. The default depth is 1.

M (Change Master Server...) option	Lets you specify the master server with the backup for the files you want to restore. If it is an invalid server or the client does not belong to a user-directed backup class on that server, you receive an error message. The master server is set to the configured default for your client each time you start the menu interface.
B (Change Source Client...) option	Lets the administrator on the master server browse and restore files for another client. The administrator can also change the configuration to give this ability to other users. When you start the menu interface this name is set to the default (normally the client on which you are running).
T (Change Destination Client) option	Lets the administrator on the master server direct restored files to another client. When you start the menu interface, this name is set to the default (normally the client on which you are running).
Y (Change Class Type) option	Lets the administrator on a server direct either standard client restores or Apollo_wbak restores. The class type must match that specified in the Source Client and Destination Client fields. You cannot restore files from one client type to another.
K (Change Keyword Phrase) option	Lets you enter a keyword phrase for your search.

Restore Archives Menu

The Restore Archives menu is the same as the Restore Backups menu, except that you initiate the restore of archived files and directories.

If you log in as root, you will see the following.



If you log in as a user, you will see the following.

Restore Raw Partition Backups Menu

The following figure shows the Restore Raw Partition Backups menu. You use the choices on this menu to select and initiate restores of raw partition backups (see “Restore Backups Menu” on page 126 for an explanation of the menu items).

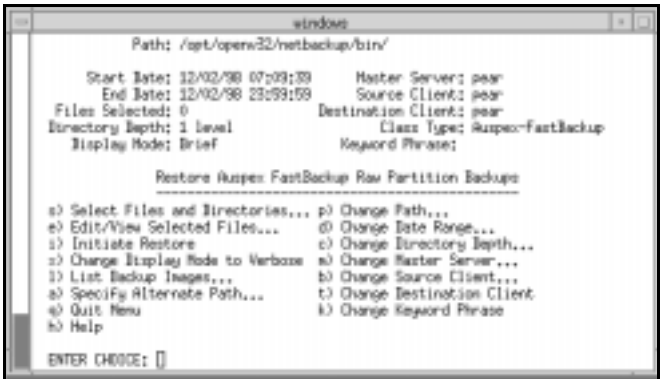
If you log in as root, you will see the following.

If you log in as a user, you will see the following.

Restore Auspex FastBackup Raw Partition Backups Menu

The following figure shows the Restore Auspex FastrrBackup Raw Partition Backups menu. You use the choices on this menu to select and initiate restores of raw partition backups from Auspex FastBackup clients (see “Restore Backups Menu” on page 126 for an explanation of the menu items).

If you log in as root, you will see the following.



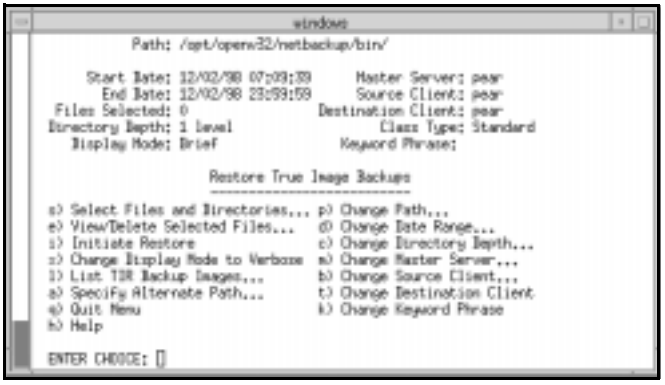
If you log in as a user, you will see the following.

Restore True Image Backups Menu

Note: NetBackup does not support true-image restores on DomainOS clients.

The following figure shows the Restore True Image Backups menu. You use the choices on this menu to select and initiate restores of true-image backups (see “Restore Backups Menu” on page 126 for an explanation of the menu items).

If you log in as root, you will see the following.



If you log in as a user, you will see the following.

Restore Database Menus

The Restore Menus for databases have choices for restoring their respective database backups The following figure is an example of the Restore Oracle DB menu.

The information at the top of the menu and the menu options have the same meaning as the corresponding lines and options on the Restore Backups menu. The one exception is the I (Initiate Archive option which starts the archive operation.

When you choose the I (Initiate Oracle DB Backup Using Selected Script(s)) option, NetBackup uses the scripts you selected with the S (Select Scripts...) option and the E (Edit/View Selected Scripts...) option to restore Oracle databases. The other Restore DB menus are the same, except for the menu choice that starts the restore.

Refer to the appropriate NetBackup database System Administrator's Guide.

Common Screens

The content of these screens varies depending on whether you are doing a backup, archive, or restore.

Backup or Archive Search Screen

During a backup or archive, the Search screen appears when you choose the S (Select Files and Directories...) option from the archive or backup menu. Use this screen to select directories and files for archive or backup.

Selections	Number of files or directories previously selected. This number changes as you select or unselect files.
Current Path	Current directory. This is the directory where currently displayed files and directories reside and is the highest level directory that you can currently show on the screen. Use Zoom(I)n or (Z)oomOut to move up or down in the directory tree from the current directory.
File List	The file list shows directories and files that are in the current directory. The options at the bottom of the screen let you to browse the directory tree and to make selections (see “Search Screen Options” on page 137).
Type Q	(not shown on screen) to exit without making any changes.

Restore Search Screen

During restores, the Search screen appears when you choose the S (Select Files and Directories...) option and NetBackup has completed its search for files and directories. Use this screen to select files and directories to restore.

The information fields on the top line have the same meanings as the Backup or Archive Search screen. The list shows the contents of the current directory at the time that the backup or archive occurred.

- For a restore archive, the list contains files and directories from user-directed archives.
- For a restore backup, the list contains files and directories from user-directed and administrator scheduled backups.
- For a true-image restore, the list contains only the directories from scheduled full and incremental backups. Files do not appear, nor do the results of user-directed backups or archives.

Type Q (not shown on screen) to exit without making any changes.

Search Screen Options

The options at the bottom of the Search screen let you browse the directory tree and make selections. Remember, as you do this, that it usually takes longer to search the backup than the file system (as is done during a backup or archive).

Execute an option by typing the letter in parentheses. For example, Z moves you up to the parent of the current directory. Type Q (not shown on screen) to exit without making changes. You can use either upper or lower case letters.

Zoom(I)n	Moves you down one level in the tree to show the files and directories that are in the directory to which the arrow symbol currently points.
(Z)oomOut	Moves you up one level in the tree to show the files and directories that are in the parent of the current directory.
(S)elect	Selects the directory or file indicated by the current position of the pointer and adds an asterisk * to the left of the line. Pressing S again clears the item.
(B)ack	Shows the previous screen of information.
(F)wd	Shows the next screen of information.
(U)p	Moves the pointer up one item in the list.
(D)n	Moves the pointer down one item in the list.
(L)eft	Shifts the display to the left, if you had previously shifted it to the right in order to show lines that are too wide for the screen.
(R)ight	Shifts the display to the right in order to show lines that are too wide for the screen.
(O)k	Retains your current selections and returns to the previous menu.

Edit/View Selections Screen

The Edit/View Selections screen appears when you choose E (Edit/View Selected Files...) option from a backup, archive, or restore (other than true-image) menu. This screen shows the directories and files that you have selected for backup, archive, or restore (depending on the operation you are performing).

Note: This screen is called View/Delete for true-image backups and restores and lets you delete but not add selections.

The top line on the screen shows the number of total selections. This number changes as you select or unselect files.

The options at the bottom of the screen let you alter your selections. Select an option by typing the letter in parentheses. You can use either upper or lower case letters. For example, B shows the previous screen. Type Q (not shown on screen) to exit without making any changes.

(A)dd Selection	This option does not appear on the View/Delete screen for true-image restores. Lets you add a selection to the list. Choosing this option shows a dialog box in which you type the pathname of the file or directory you are adding. Pressing Enter adds the new selection to the list. If you add a selection for a restore, bp uses the range of dates determined by the *current* values of Start Date and End Date when searching for files. This provides some added versatility when searching for backups. For example, if you want to add a file that is outside the date range used for existing selections, you can exit to the restore screen, change the date range, then return to the Edit/View Selections screen and add the extra file. You can also use wildcard characters *, ?, [, and] to specify multiple files and directories.
Un(S)elect	Unselects the directory or file to which the arrow symbol currently points and deletes it from the list.
(C)lear	Clears all previous selections.
(B)ack	Shows the previous screen of information.
(F)wd	Shows the next screen of information.
(U)p	Moves the pointer up one item in the list.
(D)n	Moves the pointer down one item in the list.
(L)eft	Shifts display to the left, if you had previously shifted it to the right in order to show lines that are too wide for the screen.
(R)ight	Shifts the display to the right in order to show lines that are too wide for the screen.
(O)k	Retains your current selections and returns you to the previous menu.

View/Delete Selections Screen

The View / Delete Selections screen appears when you choose E (View / Delete Selected Files...) option from the Restore True Image Backups menu. This screen shows the directories you have selected for the true-image restore.

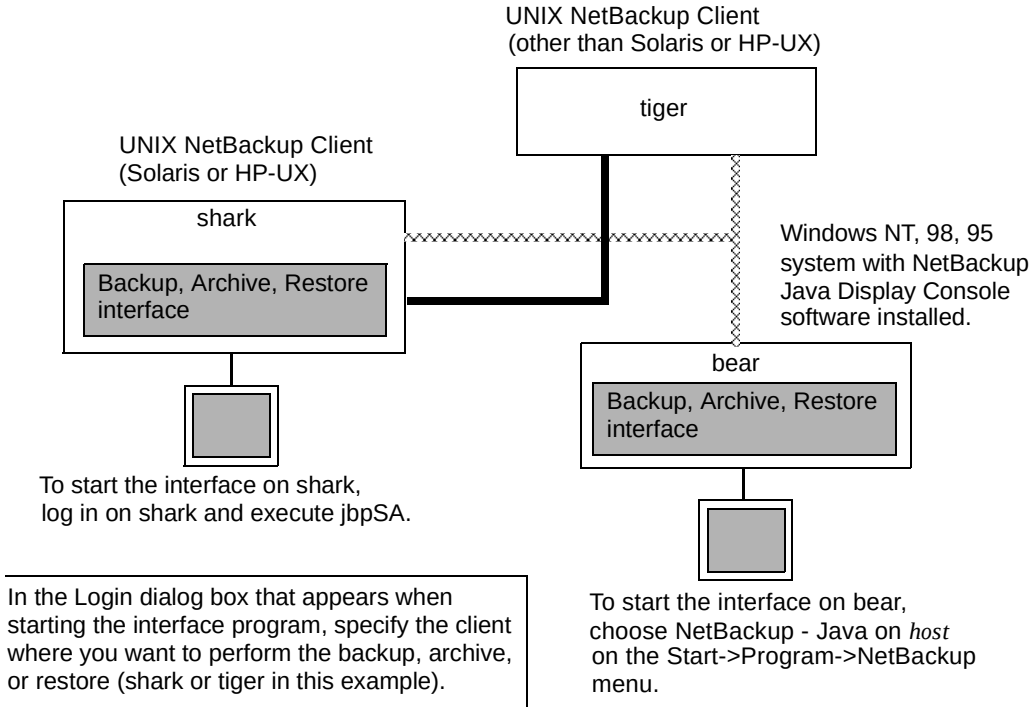
NetBackup Java User Interface

The NetBackup Java user interface (`jbpSA`) provides a graphical-user-interface through which users can perform backups, archives, and restores. The interface can be started and run on the following systems (see Figure 2):

- Supported Solaris or HP-UX systems.
- Windows NT, 98, or 95 systems that have the NetBackup Java Windows Display Console installed. The display console makes it possible to use the Java interface when a Solaris or HP-UX system is not available.

After starting the interface, the user specifies the client where they want to perform the backup, archive, or restore. The user must be an authorized user on that system.

Figure 2 NetBackup Java User Interface



The procedures for starting the interface are explained below. For operating instructions see the online help. Also, see *NetBackup Release Notes - UNIX*.

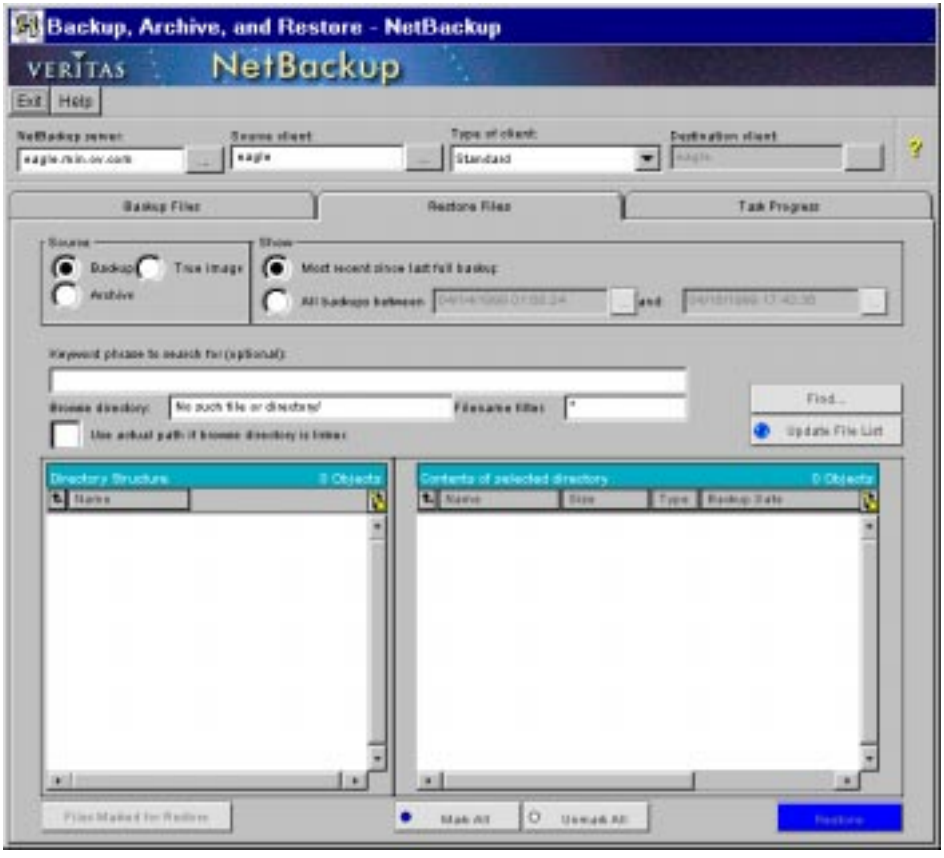
To Start the Interface on UNIX

1. Log in on the UNIX NetBackup client where you are going to start the Backup, Archive, and Restore interface.
2. Start the Backup, Archive, and Restore interface by executing:

   ```
   /usr/openv/netbackup/bin/jbpSA &
   ```

   The Login dialog box appears.
3. Type the name of the client where you want to perform the backup, archive, or restore and click OK. If you specify a client other than the one where you executed the `jbpSA` command, you also must specify a user name and password.

The Backup, Archive, and Restore - NetBackup window appears. See the online help for instructions on using this window.



To Start the Interface on a Windows Display Console

1. Click Programs on the Start menu.
2. On the Programs menu, point to NetBackup and then click NetBackup - Java on *host* on the submenu.

The Login dialog box appears and displays *host* as the NetBackup server. *host* is the default NetBackup client where you perform user operations (for example, shark on Figure 2). To perform user operations on another client, type its name in the box. When the client name is correct, type your user name and password and click OK.

When login is complete, the NetBackup Administration - Java window appears.

3. Click the Backup, Archive, and Restore icon (the other icons require root permission).

   The Backup, Archive, and Restore - NetBackup window appears. See the online help for instructions on using this window.

Man Pages

This section describes man pages specific to the NetBackup product.

The following are special conventions used in the command descriptions.

- Brackets [ ] mean that the enclosed command line component is optional.
- A vertical bar (or pipe) symbol | separates optional arguments from which the user can choose. For example, assume that a command has the following format:

  command [arg1 | arg2]

  Here, the user can choose either arg1 or arg2 (but not both).
- Italics indicate that the information is user supplied. For example, the user supplies *class*, *schedule*, and *filename* in the following command:

  `bpbackup -c` *class* `-s` *schedule filename*
- An ellipses (...) means that you can repeat the previous parameter. For example, consider the following command:

  `bpbackup` [`-S` *master_server* [,*master_server*,...]] *filename*

  Here, the `-S` option requires the first master server name. Additional names can be added, separated by commas and followed by a file name as in:

  `bpbackup -S mars,coyote,shark,minnow memofile.doc`

bp(1)

NAME

bp - start the NetBackup menu interface for users

SYNOPSIS

```
/usr/openv/netbackup/bin/bp [-a | -ra | -b | -r | -rr | -o | -ro | -
         s | -rs | -i | -ri | -k | -rk | -rti | -p | -rp | -2 | -r2 | -n
         | -rn][-verbose]

/usr/openv/netbackup/bin/bp [ -b |-a | -r | -ra][-verbose]
```

DESCRIPTION

The `bp` command starts a menu interface that lets users archive, back up, and restore files, directories, or raw partitions from their client workstations. This interface can be run from any character-based terminal (or terminal emulation window) for which the user has a `termcap` or `terminfo` definition.

The first form of the command above applies to all except Apollo clients. The second form applies to Apollo clients.

The *NetBackup User's Guide - UNIX* and the `bp` online help provide detailed operating instructions.

OPTIONS

The menu that appears at startup depends on the option used with the `bp` command. Executing the `bp` command without specifying an option starts the utility at the main menu. To start the utility at a secondary menu, specify one of the following options:

`-a`	Starts `bp` in the Archive of Files and Directories menu.
`-ra`	Starts `bp` in the Restore Archives menu.
`-b`	Starts `bp` in the Backup of Files and Directories menu.
`-r`	Starts `bp` in the Restore Backups menu.
`-rr`	Starts `bp` in the Restore Raw Partitions Backups menu.

`-o` Starts `bp` in the Backup Oracle DB menu.

`-ro` Starts `bp` in the Restore Oracle DB menu.

`-s` Starts `bp` in the Backup Sybase DB menu.

`-rs` Starts `bp` in the Restore Sybase DB menu.

`-i` Starts `bp` in the Backup Informix DB menu.

`-ri` Starts `bp` in the Restore Informix DB menu.

`-k` Starts `bp` in the Backup SQL-BackTrack DB menu.

`-rk` Starts `bp` in the Restore SQL-BackTrack DB menu.

`-rti` Starts `bp` in the Restore True Image Backups menu.

`-p` Starts `bp` in the Backup SAP DB menu.

`-rp` Starts `bp` in the Restore SAP DB menu.

`-2` Starts `bp` in the Backup DB2 DB menu.

`-r2` Starts `bp` in the Restore DB2 DB menu.

`-verbose`
Provides a verbose response.

FILES

`/usr/openv/netbackup/help/bp/*`

`/usr/openv/netbackup/logs/bp/*`

`/usr/openv/netbackup/bp.conf`

SEE ALSO

bparchive(1), bpbackup(1), bplist(1), bprestore(1), xbp(1)

bparchive(1)

NAME

bparchive - archive files to the NetBackup server

SYNOPSIS

/usr/openv/netbackup/bin/bparchive [-c *class*] [-s *schedule*] [-S *master_server* [,*master_server,...*]] [-t *class_type*] [-L *progress_log*] [-w [*hh:mm:ss*]] [-help] [-k "*keyword_phrase*"] -f *listfile* | *filenames*

DESCRIPTION

bparchive processes files that you list on the command line or in the file you specify with the -f *listfile* option. Any file path entered can be a file or directory name. If the list of files includes a directory, bparchive archives all files and subdirectories of that directory starting at the directory itself.

By default, you are returned to the system prompt after bparchive is successfully submitted. The command works in the background and does not return completion status directly to you. The -w option lets you change this behavior so bparchive works in the foreground and returns completion status after a specified time period.

bparchive writes its informative and error messages to a progress-log file. You must create this file prior to the execution of the bparchive command and then specify it with the -L *progress_log* option. If bparchive cannot archive any of the requested files or directories, you can use the progress log to determine the reason for the failure.

If you create a /usr/openv/netbackup/logs/bparchive/ directory with public-write access, bparchive creates an activity log file in this directory that you can use for troubleshooting.

In addition, if a nonroot user specifies USEMAIL = *mail_address* in their $HOME/bp.conf file or a root user specifies it in the /usr/openv/netbackup/bp.conf file, NetBackup sends mail on the archive completion status to *mail_address*. This message is sent when the archive process is complete.

The following restrictions apply to this command:

- To archive files with the `bparchive` command, you must be root to delete the file and the file must not be read-only. Otherwise, NetBackup saves the files but cannot reset their access time (utime) and does not delete them from the disk.
- If you specify a UNIX file that is a link, `bparchive` archives only the link itself, not the file to which it links.
- `bparchive` does not archive the "." or ".." directory entries, and also does not archive raw partitions.

OPTIONS

`-c` *class* Names the class to use for the user archive. If it is not specified, the NetBackup server uses the first class it finds that includes the client and a user archive schedule.

`-s` *schedule*
Names the schedule to use for the user archive. If it is not specified, the NetBackup server uses the first user archive schedule it finds in the class it is using (see the `-c` option).

`-S` *master_server* [,*master_server*,...]
Specifies the name of the NetBackup master server. The default is the first SERVER entry in the `/usr/openv/netbackup/bp.conf` file.

`-t` *class_type*
Specifies the class type as follows:

`0` = Standard

`3` = Apollo-wbak

`4` = Oracle

`6` = Informix-On-BAR

`7` = Sybase

`10` = NetWare

`11` = DataTools-SQL-BackTrack

`12` = Auspex-FastBackup

13 = MS-Windows-NT

14 = OS/2

15 = MS-SQL-Server

16 = MS-Exchange-Server

17 = SAP

18 = DB2

19 = NDMP

20 = FlashBackup

21 = Split-Mirror

22 = AFS

The default is 3 on Apollos and 0 (Standard) on other clients.

-L *progress_log*

Specifies the name of an existing file in which to write progress information. The file name must begin with /.

For example: /home/tlc/proglog.

The default is to not use a progress log.

-w [*hh:mm:ss*]

Causes NetBackup to wait for a completion status from the server before returning you to the system prompt.

Note: The locale setting for your system affects the way you must specify dates and times. See the NOTES section later in this command description.

You can optionally specify a wait time in hours, minutes, and seconds. The maximum wait time you can specify is 23:59:59. If the wait time expires before the archive is complete, the command exits with a timeout status. The archive, however, still completes on the server.

If you use -w without specifying the wait time or if you specify a value of 0, NetBackup waits indefinitely for the completion status.

`-help` Displays a synopsis of command usage when it is the only option on the command line.

`-k` *keyword_phrase*
Specifies a keyword phrase that NetBackup associates with the image created by this archive operation. You can then restore the image by specifying the keyword phrase with the `-k` option on the `bprestore` command.

The keyword phrase is a textual description of the archive that is a maximum of 128 characters in length. All printable characters are permitted including space (" ") and period (".). Enclose the phrase in double quotes ("...") or single quotes ('...') to avoid conflict with the UNIX shell.

The default keyword phrase is the null (empty) string.

`-f` *listfile* Specifies a file (*listfile*) containing a list of files to be archived and can be used instead of the *filenames* option. In *listfile*, place each file path on a separate line.

The format required for the file list depends on whether the files have spaces or newlines in the names.

To archive files that do not have spaces or newlines in the names, use this format:

filepath

Where *filepath* is the path to the file you are archiving. For example:

```
/home
/etc
/var
```

To archive files that have spaces or newlines in the names, use this format:

filepathlen filepath

Where *filepath* is the path to the file you are archiving and *filepathlen* is the number of characters in the file path.

For example:

```
5 /home

4 /etc

4 /var

19 /home/abc/test file
```

filenames

Names one or more files to be archived and can be used instead of the `-f` option.

Any files that you specify must be listed at the end, after all other options. For Apollo clients, specify absolute file paths.

NOTES

The format to use for date and time values in NetBackup commands depends your locale setting. The examples in this command description are for a locale setting of C.

If you are uncertain of the NetBackup command requirements for your locale, enter the command with the `-help` option and check the USAGE. For example:

```
/usr/openv/netbackup/bin/bparchive -help
USAGE: bparchive [-c class] [-s schedule] [-k "keyword phrase"]
-L progress_log] [-i] [-h hostname]
[-S master_server [,...,master_server]]
[-t class_type] [-w [hh:mm:ss]] -f listfile | filenames
```

Notice the hours:minutes:seconds requirements for the `-w` option. These are for a locale setting of C and can be different for other locales.

For more information on locale, see the `locale(1)` man page for your system.

EXAMPLES

Example 1

To archive a single file, enter:

```
bparchive /usr/user1/file1
```

Example 2

To archive files listed in a file named `archive_list`, enter:

```
bparchive -f archive_list
```

Example 3

To associate the keyword phrase "Archive My Home Directory 01/01/97" to the archive of the directory `/home/kwc` and use a progress log named `/home/kwc/arch.log` enter the following (all on one line):

```
bparchive -k "Archive My Home Directory 01/01/97" -L
/home/kwc/arch.log  /home/kwc
```

FILES

`$HOME/bp.conf`

`/usr/openv/netbackup/logs/bparchive/log.`*mmddyy*

SEE ALSO

`bp(1)`, `bpbackup(1)`, `bplist(1)`, `bprestore(1)`, `xbp(1)`

bpbackup(1)

NAME

bpbackup - back up files to the NetBackup server

SYNOPSIS

`/usr/openv/netbackup/bin/bpbackup [-c` *class*`] [-s` *schedule*`] [-S` *master_server* [,*master_server,...*]] [`-t` *class_type*] [`-L` *progress_log*] [`-w` [*hh:mm:ss*]] [`-help`] [`-k "`*keyword_phrase*`"] -f` *listfile* | *filenames*

`/usr/openv/netbackup/bin/bpbackup -i [-c` *class*] [`-h` *hostname*] [`-s` *schedule*] [`-S` *master_server* [,*master_server,...*]] [`-t` *class_type*] [*-w* [*hh:mm:ss*]] [`-k "`*keyword_phrase*`"`]

DESCRIPTION

`bpbackup` starts either of the following:

- A user backup that is the equivalent to what is performed by using the interface on the client (see the first form of the command shown above). This type of backup can be started from any NetBackup client in order to back up files from that client.

  The `bpbackup` command processes the files that you list on the command line or in the file that you specify with the `-f` *listfile* option. A file path can be a file or directory name. If the named files include a directory, `bpbackup` backs up all files and subdirectories of that directory starting at the directory itself.

- An immediate-manual backup of a client (see the second form of the command shown above). This variation requires the `-i` option on the `bpbackup` command and is available only to the administrator on the master server. It is the equivalent starting a manual backup from the NetBackup administrator's interface. Use the `-h` option to specify the host.

The following restrictions apply to this command:

- You must be the owner of the file or an administrator to back up a file with `bpbackup`.
- You can back up files and directories owned by other users if you have the necessary UNIX file permissions.

- If you specify a UNIX file that is a link, bpbackup backs up only the link itself, not the file to which it links.
- bpbackup does not back up the "." or ".." directory entries.

By default, you are returned to the system prompt after bpbackup is successfully submitted. The command works in the background and does not return completion status directly to you. The -w option lets you change this behavior so the command works in the foreground and returns completion status after a specified time period.

bpbackup writes informative and error messages to a progress-log file if you create the file prior to the execution of the bpbackup command and then specify the file with the -L *progress_log* option. If bpbackup cannot back up the requested files or directories, use the progress log to determine the reason for the failure.

If you create a directory named /usr/openv/netbackup/logs/bpbackup/ with public-write access, bpbackup creates an activity log file in this directory that can be used for troubleshooting.

In addition, if a nonroot user specifies USEMAIL = *mail_address* in their $HOME/bp.conf file or a root user specifies it in the /usr/openv/netbackup/bp.conf file, NetBackup sends mail on the backup completion status to *mail_address*. This message is sent when the backup process is complete.

OPTIONS

-c *class* Names the class to use for the backup.

If this option is not specified, the action depends on the type of backup as follows:

For a user backup, NetBackup uses the first class it finds that includes the client and a user backup schedule.

For an immediate-manual backup (-i option), NetBackup attempts to back up the specified files in all classes.

-i Starts an immediate-manual backup. This is the equivalent of starting a manual backup from the NetBackup administrator interface. You must be the administrator on the master server to use the -i option.

`-h` *hostname*

Use this option only in conjunction with the `-i` option. It names the client host on which to run the backup. If it is not specified, NetBackup runs the backup on all clients in the class.

`-s` *schedule*

Names the schedule to use for the backup. If it is not specified, the NetBackup server uses the first user backup schedule it finds for the client in the class it is using (see the `-c` option).

`-S` *master_server* [,*master_server*,...]

Specifies the name(s) of the NetBackup master server(s). The default is the first SERVER entry found in the `/usr/openv/netbackup/bp.conf` file.

`-t` *class_type*

Specifies the class type as follows:

`0` = Standard

`3` = Apollo-wbak

`4` = Oracle

`6` = Informix-On-BAR

`7` = Sybase

`10` = NetWare

`11` = DataTools-SQL-BackTrack

`12` = Auspex-FastBackup

`13` = MS-Windows-NT

`14` = OS/2

`15` = MS-SQL-Server

`16` = MS-Exchange-Server

`17` = SAP

`18` = DB2

`19` = NDMP

20 = FlashBackup

21 = Split-Mirror

22 = AFS

The default is 3 on Apollos and 0 (Standard) on other clients.

-L *progress_log*

Specifies the name of an existing file in which to write progress information.

For example: /home/tlc/proglog

The default is to not use a progress log.

-w [*hh:mm:ss*]

Causes NetBackup to wait for a completion status from the server before returning you to the system prompt.

Note: The locale setting for your system affects the way you must specify dates and times. See the NOTES section later in this command description.

You can optionally specify a wait time in hours, minutes, and seconds. The maximum wait time you can specify is 23:59:59. If the wait time expires before the backup is complete, the command exits with a timeout status. The backup, however, still completes on the server.

If you use -w without specifying a wait time or if you specify a value of 0, NetBackup waits indefinitely for the completion status.

-help Displays a synopsis of command usage when it is the only option on the command line.

-k *keyword_phrase*

Specifies a keyword phrase that NetBackup associates with the image being created by this backup operation. You can then restore the image by specifying the keyword phrase with the -k option on the bprestore command.

If you use the -i option with -k, NetBackup establishes an association between the keyword phrase and the backup class and image.

The keyword phrase is a textual description of the backup that is a maximum of 128 characters in length. All printable characters are permitted including space (" ") and period ("."). Enclose the phrase in double quotes ("...") or single quotes ('...') to avoid conflict with the UNIX shell.

The default keyword phrase is the null (empty) string.

`-f` *listfile*

Specifies a file (*listfile*) containing a list of files to be backed up. This option can be used instead of the *filenames* option, but cannot be used with the `-i` option. List each file on a separate line.

The format required for the file list depends on whether the files have spaces or newlines in the names.

To back up files that do not have spaces or newlines in the names, use this format:

filepath

Where *filepath* is the path to the file you are backing up. For example:

```
/home
/etc
/var
```

To back up files that have spaces or newlines in the names, use this format:

filepathlen filepath

Where *filepath* is the path to the file you are backing up and *filepathlen* is the number of characters in the file path.

For example:

```
5 /home
4 /etc
4 /var
```

```
19 /home/abc/test file
```

filenames

Names one or more files to be backed up. This option can be used instead of the `-f` option, but cannot be used with the `-i` option. Any files that you specify must be listed at the end, following all other options. For Apollo clients, specify absolute file paths.

NOTES

The format that you must use for date and time values in NetBackup commands depends on your locale setting. The examples in this command description are for a locale setting of C.

If you are uncertain of the NetBackup command requirements for your locale, enter the command with the `-help` option and check the USAGE. For example:

```
/usr/openv/netbackup/bin/bpbackup -help
USAGE: bpbackup [-c class] [-s schedule] [-k "keyword phrase"]
      [-L progress_log] [-i] [-h hostname]
      [-S master_server[,...,master_server]]
      [-t class_type] [-w [hh:mm:ss]] -f listfile | filenames
```

Notice the hours:minutes:seconds requirements for the `-w` option. These are for a locale setting of C and can be different for other locales.

For more information on locale, see the `locale(1)` man page for your system.

EXAMPLES

Example 1

To perform a user backup of a single file, enter:

```
bpbackup /usr/user1/file1
```

Example 2

The following command starts a user backup of the files that are listed in a file named `backup_list`.

```
bpbackup -f backup_list
```

Example 3

The following command (all on one line) starts an immediate-manual backup of the client host named diablo, in the class named cis_co. The class type is Standard class and is in the configuration on the master server named hoss. The progress log is /home/hrp/prog.

```
bpbackup -c cis_co -i -h diablo -S hoss -t 0 -L
/home/hrp/prog
```

Example 4

The following command (all on one line) associates the keyword phrase "Backup My Home Directory 01/01/97" to the user backup of the directory /home/kwc. The progress log is /home/kwc/bkup.log.

```
bpbackup -k "Backup My Home Directory 01/01/97" -L
/home/kwc/bkup.log  /home/kwc
```

Example 5

The following command (all on one line) associates the keyword phrase "Class Win NT 01/01/97" to the immediate-manual backup of the client host named slater in the ms-windows-nt type class named win_nt_class. The progress log is /tmp/bkup.log.

```
bpbackup -k "Class Win NT 01/01/97" -i -h slater -c
win_nt_class -t 13 -L /tmp/bkup.log
```

FILES

$HOME/bp.conf

/usr/openv/netbackup/logs/bpbackup/log.*mmddyy*

SEE ALSO

bp(1), bparchive(1), bplist(1), bprestore(1), xbp(1)

bplist(1)

NAME

bplist - lists backed up and archived files on the NetBackup server

SYNOPSIS

/usr/openv/netbackup/bin/bplist [-A | -B][-C *client*][-S *master_server*][-t *class_type*][-k *class*][-F][-R [n]][-b | -c | -u][-l][-r][-T][-unix_files][-nt_files][-s *mm/dd/yy* [*hh:mm:ss*]][-e *mm/dd/yy* [*hh:mm:ss*]][I][PI][-help][-keyword "*keyword_phrase*"] [*filename*]

DESCRIPTION

bplist shows a list of previously archived or backed up files according to the options that you specify. You can choose the file or directory and the time period that you want the listing to cover. Directories can be recursively displayed to a specified depth.

The list shows only the files that you have read access to. You also must own or have read access to all directories in the file paths. You can list files that were backed up or archived by another client only if you are validated to do so by the NetBackup administrator.

If you create directory /usr/openv/netbackup/logs/bplist/ with public-write access, bplist creates an activity log file in this directory that you can use for troubleshooting.

The output of bplist goes to standard output.

OPTIONS

-A | -B Specifies whether to produce the listing from archives (-A) or backups (-B). The default is -B.

-C *client* Specifies a client name to use for finding backups or archives to list. This name must be as it appears in the NetBackup configuration. The default is the current client name.

-S *master_server*
Specifies the name of the NetBackup server. The default is the first SERVER entry found in the /usr/openv/netbackup/bp.conf file.

-t *class_type*
Specifies the class type as follows:

0 = Standard

3 = Apollo-wbak

4 = Oracle

6 = Informix-On-BAR

7 = Sybase

10 = NetWare

11 = DataTools-SQL-BackTrack

12 = Auspex-FastBackup

13 = MS-Windows-NT

14 = OS/2

15 = MS-SQL-Server

16 = MS-Exchange-Server

17 = SAP

18 = DB2

19 = NDMP

20 = FlashBackup

21 = Split-Mirror

20 = AFS

The default is 3 (Apollo) on Apollos and 0 (Standard) on other clients.

`-k` *class* Names the class to search to produce the list. If not specified, all classes are searched.

`-F` Specifies that in the list output, symbolic links will end with a trailing @ and executable files with a trailing *.

`-R` [*n*] Recursively lists subdirectories encountered to a depth of *n*. The default for *n* is 999.

`-b | -c | -u`
: Specifies an alternate date and time to be used for printing with the `-l` option:

  `-b` displays the backup date and time of each file.

  `-c` displays the last inode modification date and time for each file.

  `-u` displays the last access date and time of each file.

  The default is to display the time of last modification of each file.

`-l`
: Lists in long format, giving mode, owner, group, size in bytes, and time of last modification for each file (see the EXAMPLES section of this man page). The list shows the mode of each file as 10 characters that represent the standard UNIX file permissions. The first character is one of the following:

  d (specifies a directory)

  l (specifies a link)

  - (specifies a file)

  The next nine characters show the three sets of permissions. The first set shows the owner's permissions, the next set shows the user-group permissions, and the last set shows permissions for all other users. Each set of three specifies the read, write, and execute permissions as follows:

  r means the file is readable

  w means the file is writable

  x means the file is executable

  - means the indicated permission is not granted

`-r`
: Lists raw partitions that were backed up. The default is to list file systems.

`-T`
: Lists directories in true-image backups. The default is to list non-true-image backups.

`-unix_files`
Lists the files and directories in UNIX format. For example: `/C/users/test`.

`-nt_files`
Lists the files and directories in Windows NT format. For example: `C:\users\test`.

`-s` *mm/dd/yy* [*hh:mm:ss*]

`-e` *mm/dd/yy* [*hh:mm:ss*]

Specifies the start and end date range for the listing.

Note: The locale setting for your system affects the way you must specify dates and times. See the NOTES section later in this command description.

`-s` specifies a start date and time for the listing. The resulting list shows only files in backups or archives that occurred at or after the specified date and time. Use the following format for the start date and time:

mm / *dd* / *yy* [*hh*[:*mm*[:*ss*]]]

The valid range of dates are from 01 / 01 / 70 00:00:00 to 01 / 19 / 2038 03:14:07. The default is 01 / 01 / 70 00:00:00.

`-e` specifies an end date and time for the listing. The resulting list shows only files from backups or archives that occurred at or before the specified date and time. Use the same format as explained above for start date and time. The default is the current date and time.

`-I` Specifies a case-insensitive search. This means that capitalization is not considered when comparing names (for example, Cat matches cat).

`-PI` Specifies a path-independent search, which means that NetBackup searches for a specified file or directory without regard to the path. For example, if a file named `test` exists in the three directories shown below, a search for `test` finds all three instances of the file:

`/tmp/junk/test`

```
/abc/123/xxx/test

/abc/123/xxx/yyy/zzz/test
```

`-help` Displays a synopsis of command usage when it is the only option on the command line.

`-keyword` "*keyword_phrase*"
Specifies a keyword phrase for NetBackup to use when searching for backups or archives from which to restore files. The phrase must match the one that was previously associated with the backup or archive by the `-k` option of the `bpbackup` or `bparchive` command.

You can use this option in place of or in combination with the other restore options in order to make it easier to restore your backups and archives. The following meta characters can be used to simplify the task of matching keywords or parts of keywords in the phrase:

* matches any string of characters.

? matches any single character.

[ ] matches one of the sequence of characters specified within the brackets.

[-] matches one of the range of characters separated by the "-".

The keyword phrase can be up to 128 characters in length. All printable characters are permitted including space (" ") and period (".). The phrase must be enclosed in double quotes ("...") or single quotes (‘...’) to avoid conflict with the UNIX shell.

The default keyword phrase is the null (empty) string.

filename Names the file or directory to list. If you do not specify a path, the default is the current working directory.

Any files that you specify must be listed at the end, following all other options.

NOTES

The format that you must use for date and time values in NetBackup commands depends on your locale setting. The examples in this command description are for a locale setting of C.

If you are uncertain of the NetBackup command requirements for your locale, enter the command with the `-help` option and check the USAGE. For example:

```
/usr/openv/netbackup/bin/bplist -help
```

```
USAGE: bplist [-A | -B] [-C client] [-S master_server]
[-t class_type] [-k class] [-keyword "keyword phrase"]
[-F] [-R [n]] [-b | -c | -u] [-l] [-r] [-T]
[-s mm/dd/yy [hh:mm:ss]] [-e mm/dd/yy [hh:mm:ss]] [filename]
```

Notice the month/day/year and hours:minutes:seconds requirements for the `-s` and `-e` options. These are for a locale setting of C and can be different for other locales.

For more information on locale, see the `locale(1)` man page for your system.

EXAMPLES

Example 1

To list recursively, in long format, the files that were backed up in `/home/user1`.

```
bplist -l -R /home/user1
```

```
lrwxrwxrwx  user1    eng     0   Apr  5 12:25 /home/user1/dirlink
drwxr-xr-x  user1    eng     0   Apr  4 07:48 /home/user1/testdir
drwxr-x--- user1     eng     0   Apr  4 07:49 /home/user1/dir
-rwxr-----  user1    eng   1002  Apr  2 09:59 /home/user1/dir/file
lrwxrwxrwx  user1    eng     0   Apr  4 07:49 /home/user1/dir/link
```

Example 2

To list, with details, the files that were backed up and associated with all or part of the keyword phrase

```
"My Home Directory"
```

in directory /home/kwc, enter the following:

```
bplist -keyword "*My Home Directory*" -l /home/kwc
```

Example 3

To list, with details, the files that were archived and associated with all or part of the keyword phrase

"My Home Directory"

in directory /home/kwc enter the following:

```
bplist -A -keyword "*My Home Directory*" -l /home/kwc
```

Example 4

To list, recursively and with details, the files that were backed up on drive D of Windows NT client slater and associated with all or part of the keyword phrase

"Win NT"

enter the following:

```
bplist -keyword "*Win NT*" -C slater -t 13 -R -l /D
```

FILES

/usr/openv/netbackup/logs/bplist/log.*mmddyy*

SEE ALSO

bp(1), bparchive(1), bpbackup(1), bprestore(1), xbp(1)

bprestore(1)

NAME

bprestore - restores files from the NetBackup server

SYNOPSIS

`/usr/openv/netbackup/bin/bprestore` [`-A` | `-B`][`-K`][`-l` | `-H` | `-y`] [`-r`][`-T`][`-L` *progress_log*][`-R` *rename_file*][`-C` *client*][`-D` *client*][`-S` *master_server*][`-t` *class_type*][`-s` *mm/dd/yy* [*hh:mm:ss*]][`-e` *mm/dd/yy* [*hh:mm:ss*]][`-w` [*hh:mm:ss*]][`-k` "*keyword_phrase*"] `-f` *listfile* | *filenames*

DESCRIPTION

`bprestore` lets users restore a backed up or archived file or list of files. You can also name directories to restore. If you include a directory name, `bprestore` restores all files and subdirectories of that directory.

By default, you are returned to the system prompt after `bprestore` is successfully submitted. The command works in the background and does not return completion status directly to you. The `-w` option lets you change this behavior so `bprestore` works in the foreground and returns completion status after a specified time period.

The `bprestore` command restores the file from the most recent backups within the time period you specify. `bprestore` overwrites any file of the same name that already exists on the local client disk, unless you include the `-K` option. It is also possible to restore files that were backed up or archived on another client (`-C` option). You must be validated by the NetBackup administrator to restore from other clients.

Use the `bplist` command to display information on the files and directories that were backed up or archived.

`bprestore` writes informative and error messages to a progress-log file if you create the file prior to the execution of the `bprestore` command and then specify the file with the `-L` *progress_log* option. If `bprestore` cannot restore the requested files or directories, you can use the progress log to find the reason for the failure.

For detailed troubleshooting information, create a directory named `/usr/openv/netbackup/logs/bprestore` with public-write access. `bprestore` then creates an activity log file in this directory.

In addition, if a nonroot user specifies `USEMAIL = mail_address` in their `$HOME/bp.conf` file, NetBackup sends mail on the restore completion status to *mail_address*. This message is sent when the restore process is complete.

The following restrictions apply to `bprestore`:

- You can restore files and directories that you own and those owned by other users if you have read access. You need write access to another user's directories and files to restore that user's files to their original location.
- The operating system restricts the number of files and directories that you can specify on a single `bprestore` command line. If this is a problem, use the `-f` option to restore the files.

OPTIONS

`-A | -B` Specifies whether to restore from archives (`-A`) or backups (`-B`). The default is `-B`.

`-K` Specifying this option causes `bprestore` to keep existing files rather than writing over them when restoring files with the same name. The default is to overwrite existing files.

Note: The `-l | -H | -y` options apply only when restoring UNIX files to a UNIX system.

`-l | -H | -y`

Specifying `-l` renames the targets of UNIX links by using the `-R` *rename_file* option in the same way as when renaming files.

Specifying `-H` renames UNIX hard links by using the `-R` *rename_file* option in the same way as when renaming files. Soft links are unchanged.

Specifying `-y` renames UNIX soft links by using the `-R` *rename_file* option in the same way as when renaming files. Hard links are unchanged.

See Example 5 in the EXAMPLES section.

`-r` Specifying this option restores raw partitions instead of file systems.

`-L` *progress_log*
Specifies the name of an existing file in which to write progress information.

For example: `/home/tlc/proglog`

The default is to not use a progress log.

`-R` *rename_file*
Specifies the name of a file with name changes for alternate-path restores.

Use the following form for entries within the file:

change *backup_filepath* to *restore_filepath*

The file paths must start with / (slash) and the first *backup_filepath* that is matched is replaced with the *restore_filepath* string. The default is to restore using the original path.

For example, the following entry renames `/usr/fred` to `/usr/fred2`:

```
change /usr/fred to /usr/fred2
```

`-C` *client* Specifies a client name to use for finding backups or archives from which to restore files. This name must be as it appears in the NetBackup database. The default is the current client name.

`-D` *client* Specifies a destination client. This can be done by a root user on the master server in order to direct the restored files to a machine other than the client specified with the `-C` option.

The default is the first server found in the `/usr/openv/netbackup/bp.conf` file.`-t` *class_type*

Specifies the class type as follows:

`0` = Standard

`3` = Apollo-wbak

`4` = Oracle

6 = Informix-On-BAR

7 = Sybase

10 = NetWare

11 = DataTools-SQL-BackTrack

12 = Auspex-FastBackup

13 = MS-Windows-NT

14 = OS/2

15 = MS-SQL-Server

16 = MS-Exchange-Server

17 = SAP

18 = DB2

19 = NDMP

20 = FlashBackup

21 = Split-Mirror

20 = AFS

The default is 3 on Apollos and 0 (Standard) on other clients.

-s *mm/dd/yy* [*hh:mm:ss*]

-e *mm/dd/yy* [*hh:mm:ss*]

Specifies the start and end date range for the listing. The bprestore command restores only files from backups or archives that occurred within the specified start and end date range.

Note: The locale setting for your system affects the way you must specify dates and times. See the NOTES section of this command description.

-s specifies a start date and time for the restore window. bprestore restores files only from backups or archives that occurred at or after the specified date and time. Use the following format:

mm / *dd* / *yy* [*hh*[:*mm*[:*ss*]]]

The valid range of dates are from 01 / 01 / 70 00:00:00 to 01 / 19 / 2038 03:14:07. The default start date is 01 / 01 / 70 00:00:00.

`-e` specifies an end date and time for the restore window. `bprestore` restores only files in backups or archives that occurred at or before the specified date and time. Use the same format as for the start date and time.

The end backup date and time do not need to be exact. The `bprestore` command restores the file that has the specified backup date and time or the file that is the most recent backup preceding the end date and time. The default is the current date and time.

If you do not specify either `-s` or `-e`, `bprestore` restores the most recently backed up version of the file.

`-T` Specifies a true-image restore, where only files and directories that existed in the last true-image backup are restored. This option is useful only if true-image backups were performed. If this option is not specified, all files and directories meeting the specified criteria are restored, even if they were deleted.

`-w` [*hh:mm:ss*]
Causes NetBackup to wait for a completion status from the server before returning you to the system prompt.

Note: The locale setting for your system affects the way you must specify dates and times. See the NOTES section of this command description.

You can optionally specify a wait time in hours, minutes, and seconds. The maximum wait time you can specify is 23:59:59. If the wait time expires before the restore is complete, the command exits with a timeout status. The restore, however, still completes on the server.

Specifying 0 or not specifying a time, means wait indefinitely for the completion status.

`-k "`*keyword_phrase*`"`

Specifies a keyword phrase for NetBackup to use when searching for backups or archives from which to restore files. The phrase must match the one that was previously associated with backup or archive by the `-k` option of the `bpbackup` or `bparchive` command.

You can use this option in place of or in combination with the other restore options in order to make it easier to restore your backups and archives. The following meta characters can simplify the task of matching keywords or parts of keywords in the phrase:

* matches any string of characters.

? matches any single character.

[ ] matches one of the sequence of characters specified within the brackets.

[-] matches one of the range of characters separated by the "-".

The keyword phrase can be up to 128 characters in length. All printable characters are permitted including space (" ") and period (."). The phrase must be enclosed in double quotes ("...") or single quotes (‘...’) to avoid conflict with the UNIX shell.

The default keyword phrase is the null (empty) string.

`-f` *listfile*

Specifies a file (*listfile*) containing a list of files to be restored and can be used instead of the *filenames* option. In *listfile*, list each file path on a separate line.

The format required for the file list depends on whether the files have spaces or newlines in the names.

To restore files that do not have spaces or newlines in the names, use this format:

filepath

Where *filepath* is the path to the file that you are restoring. For example:

`/home`

```
/etc

/var
```

To restore files that have spaces or newlines in the names, use one of the following formats:

filepathlen filepath

filepathlen filepath start_date_time end_date_time

filepathlen filepath `-s` *datetime* `-e` *datetime*

Where:

filepath is the path to the file you are restoring.

filepathlen is the total number of characters in the file path.

start_date_time and *end_date_time* are the decimal number of seconds since 01/01/70 00:00:00.

datetime is the same as the command line (*mm/dd/yy* [*hh*[:*mm*[:*ss*]]]). The start and end date and time specified on the command line is used unless a line in *listfile* overrides it. The dates may change from line to line.

The following is an example that uses *filepathlen filepath*:

```
5 /home

4 /etc

4 /var

19 /home/abc/test file
```

filenames Names one or more files to be restored and can be used instead of the `-f` option.

Any files that you specify must be listed at the end, following all other options. You must also specify absolute file paths.

NOTES

The format that you must use for date and time values in NetBackup commands depends on the locale setting. The examples in this command description are for a locale setting of C.

If you are uncertain of the NetBackup command requirements for your locale, enter the command with the `-help` option and check the USAGE. For example:

```
/usr/openv/netbackup/bin/bprestore -help
USAGE: bplist [-A | -B] [-C client] [-S master_server]
[-t class_type] [-k class] [-keyword "keyword phrase"]
[-F] [-R [n]] [-b | -c | -u] [-l] [-r] [-T]
[-s mm/dd/yy [hh:mm:ss]] [-e mm/dd/yy [hh:mm:ss]] [filename]
```

Notice the month/day/year and hours:minutes:seconds requirements for the `-s` and `-e` options. These are for a locale setting of C and can be different for other locales.

For more information on locale, see the `locale(1)` man page for your system.

EXAMPLES

Example 1

To restore a file from backups of `/usr/user1/file1` that were performed between 04/01/93 06:00:00 and 04/10/93 18:00:00, enter the following (all on one line):

```
bprestore -s 04/01/93 06:00:00 -e 04/10/93 18:00:00
/usr/user1/file1
```

Example 2

To restore files listed in a file named `restore_list` by using the most recent backups, enter the following:

```
bprestore -f restore_list
```

Example 3

To restore the directory /home/kwc from the backups or archives that are associated with all or part of the keyword phrase "My Home Directory" and use a progress log named /home/kwc/bkup.log, enter the following (all on one line):

```
bprestore -k "*My Home Directory*" -L /home/kwc/bkup.log
/home/kwc
```

Example 4

To restore the D drive on the Windows NT client slater from the backups or archives that are associated with all or part of the keyword phrase "My Home Dir" and use a progress log named /home/kwc/bkup.log, enter the following (all on one line):

```
bprestore -k "*My Home Dir*" -C slater -D slater -t 13 -L
/home/kwc/bkup.log  /D
```

Example 5

Assume you have a rename file named /home/kwc/rename on a UNIX client and it contains the following:

```
change /home/kwc/linkback to /home/kwc/linkback_alt
```

To restore the hard link named /home/kwc/linkback to alternate path /home/kwc/linkback_alt on that client, execute:

```
bprestore -H -R /home/kwc/rename /home/kwc/linkback
```

FILES

$HOME/bp.conf

/usr/openv/netbackup/logs/bprestore/log.mmddyy

SEE ALSO

bp(1), bparchive(1), bpbackup(1), bplist(1), xbp(1)

xbp(1)

NAME

xbp - start the X Windows based interface for NetBackup users

SYNOPSIS

`/usr/openv/netbackup/bin/xbp [-r][-ra][-rr][-nl][-browselimit` *files*] [X *options*]

DESCRIPTION

The `xbp` command starts a graphical user interface that lets users archive, back up, and restore files, directories, or raw partitions from their client workstations. You can use `xbp` only from an X terminal or X server that is compatible with MIT release X11.R4 (or later) of the X Window system.

The `xbp` interface follows OSF/Motif conventions. If you are are unfamiliar with these conventions, see the *OSF/Motif User's Guide*, authored by the Open Software Foundation and published by Prentice-Hall, Inc., ISBN 0-130640509-6.

The *NetBackup User's Guide - UNIX* and the `xbp` online help provide detailed operating instructions.

OPTIONS

`xbp` has separate modes for backups, archives, and restores. The backup and archive modes display the file system. By default, `xbp` starts in filesystem mode. The following options allow you to directly control the startup mode:

`-r` Start with display of backups for possible restore.

`-ra` Start with display of archives for possible restore.

`-rr` Start with display of raw-partition backups for possible restore.

`-nl` Specifies that `xbp` does not resolve links during the search. The default is to resolve links.

`-browselimit` *files*
Specifies the limit for implicit searching.

When switching to restore mode, if the number of files and directories that were backed up during the specified date range is large (10000 by default), xbp pops up a warning dialog saying that searching is delayed until the user explicitly selects Update Display from the Edit menu.

By using the -browselimit parameter when invoking xbp, a user can increase this limit beyond 10000 files.

Also, xbp supports the standard command-line options for X programs. One of these is the -d option, which forces the name of the X terminal or server. Most users will already have their DISPLAY environment variable defined and can routinely ignore the -d option.

Other useful X options are:

-bg *color* Specifies the color to use for the background of the window. The default is white.

-fg *color* Specifies the color to use for displaying text. The default is black.

-font Allows you to enlarge text for visibility. It is best to use fixed-pitch fonts because xbp formats some text into columns. These columns can appear uneven with proportional fonts.

-geometry
Allows you to control the initial size and position of the xbp window.

-title Controls the window manager title bar and is useful if you run several instances of xbp at once.

FILES

/usr/openv/netbackup/help/xbp/*

/usr/openv/netbackup/bp.conf

SEE ALSO

bp(1), bparchive(1), bpbackup(1), bplist(1), bprestore(1)

Glossary

alternate-client restore
Restores files to a different client than the one from which they were backed up.

alternate path restore
Restores files to a different directory than the one from which they were backed up.

attributes for a class
Configuration parameters that control the behavior of NetBackup during operations involving this class.

automatic backup
A scheduled backup by the master server.

backup window
The period of time during which backups can begin.

bp
A backup, archive, and restore utility for users on NetBackup UNIX clients. It has a character-based, menu interface that can be run from terminals that do not have X Windows capabilities.

bp.conf file
A NetBackup configuration file on UNIX servers and also on UNIX, Macintosh, and OS/2 clients.

CDF
Context-dependent file, which is a type of directory structure on a Hewlett-Packard system.

class
Defines the backup policy for a group of one or more clients that have similar backup requirements.

command lines
Commands that users can execute either from the command line or in scripts.

compression
The process of compacting data to enable more efficient transmission and storage.

ctime
The time that a UNIX inode was changed.

cumulative-incremental backup
A backup that is scheduled by the administrator on the master server and backs up all files that have changed since the last successful full backup. All files are backed up if no prior backup has been done.

daemon
A program on a UNIX system that runs in the background and performs some task (for example, starting other programs when they are needed). Daemons are generally referred to as services or processes on Windows NT NetBackup servers and clients.

database-extension clients
Clients with additional NetBackup software that is designed to back up relational databases.

differential-incremental backup
Scheduled by the administrator on the master server and backs up files that have changed since the last successful full or incremental backup.

directory tree
The hierarchical structure in which files are organized on a disk. Each directory lists the files and directories that are directly below it in the tree. On UNIX, the topmost directory is called the root directory.

disaster recovery
Recovering data from backups after a disk crash or other catastrophe.

disk-image backup
A bit-by-bit rather than a file system backup of a disk drive on Windows NT.

Domain Name Service (DNS)
A program that handles name translation for network communications.

encryption
Provides additional security by encrypting backup data on the client. This capability is available only with the NetBackup Encryption option.

exclude list
A list that designates files or directories to exclude from automatic backups.

FlashBackup
A special type of raw-partition backup that is available only with the NetBackup FlashBackup option.

frequency (backup)
How often NetBackup performs scheduled backups. For example, if the frequency is seven days then backups occur once a week.

full backup
Copies to a storage unit all files and directories that are beneath a specified directory.

global attributes
NetBackup configuration attributes that affect all classes.

goodies directory
A directory containing programs, scripts, and other files that are not formally supported.

hard link
On UNIX, a hard link is a pointer to the inode for the data.

image
The collection of data that NetBackup saves for an individual client during each backup or archive. The image contains all the files, directories, and catalog information associated with the backup or archive.

include list
A list that designates files or directories to add back in from the exclude list.

incremental backup
See “cumulative-incremental backup" and “differential-incremental backup."

inode
A UNIX data structure that defines the existence of a single file.

jbp
A Java-based interface for performing user backups, archives, and restores.

keyword phrase
A keyword phrase is a textual description of a backup.

link
See “hard link" or “symbolic link."

man pages
Online documentation provided with UNIX computer systems and applications.

master server
NetBackup server that provides administration and control for backups and restores of client data.

menu interface
A character-based interface for use on terminals that do not have X Window capabilities.

multiplexing
The process of sending concurrent-multiple backups from one or more clients to a single storage device and interleaving those images onto the media.

NFS
Network file system.

OSF and Motif
A set of specifications for user-interface design.

PC Clients
Refers to NetBackup clients that have Microsoft Windows (NT, 98, 95), Macintosh, or IBM OS/2 operating systems.

raw-partition backup
Bit-by-bit backup of a partition of a disk drive on UNIX. On Windows NT, this is called a disk-image backup.

rbak
The program that DomainOS clients use to read data from tape during a restore.

restore
(verb) The act of restoring selected files and directories from a previous backup or archive and returning them to their original directory locations (or to an alternate directory).
(noun) The process of restoring selected files and directories from a previous backup and returning them to their original directory locations (or to an alternate directory).

schedules
Controls when backups can occur in addition to other aspects of the backup, such as: the type of backup (full, incremental) and how long NetBackup retains the image.

slave server
NetBackup servers whose attached storage units provide additional storage. The master server schedules and manages the backup and restore operations.

session
An instance of NetBackup checking its schedules for backups that are due, adding them to its worklist, and attempting to complete all jobs in the worklist. For user backups and archives, a session usually consists of a single backup or archive.

symbolic link
On a UNIX system, this is a pointer to the name of the file that has the source data.

TIR
See “true image restore."

true image restore
Restores the contents of a directory to what it was at the time of any scheduled full or incremental backup. Previously deleted files are ignored.

user operation
A backup, archive, or restore that is started by a person on a client system.

verbose flag
Causes a higher level of detail to be written in the logs.

wbak
The program that DomainOS clients use to write data on tape.

wildcard characters
A character that can be used to represent other characters in searches.

xbp
A backup, archive, and restore program for users on NetBackup UNIX clients. It has an X Windows based, graphical interface.

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